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W. Lupman

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant	: Daniel A. Barberg	Appeal No.
Serial No.	: 08/325,549	
Filed	: October 18, 1994	Group Art Unit: 2405
For	: REEL INSIDE BUCKET	Examiner: J. Nguyen
Docket No.	: B560.12-0002	

BRIEF FOR APPELLANT

Assistant Commissioner of Patents
Washington, D.C. 20231

I CERTIFY THAT THIS PAPER IS BEING SENT BY U.S. MAIL, FIRST CLASS, TO THE ASSISTANT COMMISSIONER OF PATENTS, WASHINGTON, D.C. 20231, THIS 11th DAY OF December, 1995.

Todd A. Rattle
PATENT ATTORNEY

Sir:

This is an appeal from an Office Action dated July 10, 1995 in which claims 1, 2, 15-17, 18-22, 24, 26, 33, 34, 36 and 37 were finally rejected.

Real Party in Interest

The real party in interest is Reel-A-Pail, Inc. who is the owner of the entire right, title and interest in the application.

Related Appeals and Interferences

There are no known related appeals or interferences involving the subject matter or issues in this appeal.

Status of the Claims

I. Total number of claims in the application

Claims in the application are: 1-37, inclusive.

II. Status of all the claims

A.	Claims cancelled:	2, 12-14, 15, 20 and 21
B.	Claims withdrawn but not cancelled:	3-11, 23, 25, 27-32 and 35
C.	Claims pending:	1, 16-19, 22, 24, 26, 33, 34, 36 and 37

D. Claims allowed: none

E. Claims rejected: 1, 16-19, 22, 24, 26, 33, 34, 36 and 37

III. Claims on appeal

A. The claims on appeal are: 1, 16-19, 22, 24, 26, 33, 34, 36 and 37.

Status of Amendments

The present Appeal has been filed in response to a Final Office Action dated July 10, 1995. An Amendment After Final was filed on October 10, 1995, which included proposed amendments to claims 1, 16-19, 22, 24, 26, 33, 34, 36 and 37 and which canceled claims 2, 15, 20 and 21 to overcome rejections under 35 U.S.C. § 112, first paragraph and second paragraph and to place the application in better form for appeal. In an Advisory Action dated November 15, 1995, it was indicated that the Amendment After Final would be entered upon the filing of an Appeal. A Supplemental Amendment After Final was filed by facsimile on December 11, 1995, which deleted the feature of "a handle coupled to the side wall for carrying the bucket so that the side wall of the bucket is substantially upstanding" to overcome objections to the drawings under 37 CFR § 1.83(a). No indication has yet been received from the Examiner as to whether the Supplemental Amendment After Final dated December 11, 1995 would be entered.

Summary of Invention

The present invention as set forth in Applicant's independent claims 1 and 37 is directed to an elongate flexible member storing device (130) having a container (12) (see page 4, lines 8-12), a spool (134) disposed within the container (12) free from attachment to the container (12), a foot plate (14) (see page 6, line 19, page 10, lines 13-15 and page 17, line 17) secured to an exterior of the base (22) of the container (12) and means (136) for rotating the spool within the container (136). The spool (134) has a bottom freely resting upon the base (22) of the container (12). The foot plate (132) has a generally horizontal surface extending below the base of the container beyond the side wall so that force may be applied to the horizontal surface for stabilizing the device. Because the foot plate (132) extends below the base (22) of the container beyond the side wall (24), force may be applied to the horizontal surface for

stabilizing the device as the spool is rotated within the container (12) and when the spool (134) is removed from the container (12).

The present invention as set forth in Applicant's independent claims 17, 18 and 36 is directed to a device (130) for storing an elongate flexible member having a container (12) with a cylindrical side wall (24), a spool (18) disposed within the container, means for rotating the spool (134) within the container (12) and means (24) for retaining the spool vertically and concentrically within the container free from attachment to the container so that the spool may be removed from the container as one piece. The spool includes a bottom having a round bottom plate (42), bearing means (16) coupled to the bottom plate (42), a round top plate (64), and a column (44) vertically mounted between the round top plate (64) and the round bottom plate (42) independent of the base (22). The bearing means (16) freely rest and support the spool upon the base so that the spool is free from attachment within the container (12) to allow the spool to be rotated within the container and to allow the spool to be lifted and removed from the container. (see page 5, lines 9-10 and Figure 2). The side wall (24) of the container engages peripheral edges of both the round top and the bottom plates of the spool (134) to concentrically and vertically retain the spool (134) within the container (12) during rotation of the spool (134).

Issues

I. Whether the drawings are in compliance under 37 CFR § 1.83(a) which requires that the drawings show every feature of the invention specified in the claims.

II. Whether the specification and claims 1, 2, 15 and 16, as amended, are in compliance with 35 U.S.C. § 112, second paragraph.

III. Whether claims 1, 16, 17, 18, 19, 22, 24, 26, 33, 34, 36 and 37, as amended, are in compliance with 35 U.S.C. § 112, second paragraph.

IV. Whether Harrill (U.S. Patent 4,244,536) in combination with Chong (U.S. Patent 4,015,795) and further in combination with Schwartz (U.S. Patent 4,520,239) render obvious under 35 U.S.C. § 103 claims 1, 16 and 17 which are directed to an elongate flexible member storing device having a footplate secured to an exterior of a base of a container wherein the footplate has a generally horizontal surface extending below the base of the container beyond the side wall so that

force may be applied to the horizontal surface for stabilizing the device as the spool is rotated and when the spool is being removed from the container.

V. Whether Harrill in combination with Chong and further in combination with Schwartz render obvious under 35 U.S.C. § 103 claim 17 which is directed to an elongate flexible member storing device including a spool having a bottom freely resting within a container so that the spool is disposed within the container free from attachment to the container and means for retaining the spool vertically and concentrically within the container free from attachment to the container so that the spool may be removed from the container as one piece.

VI. Whether Chong in combination with Harrill render obvious under 35 U.S.C. § 103 claims 18, 19, 22, 24, 26, 33, 34, 36 and 37 which are directed to an elongate flexible member storing device including the combination of (1) a bucket having a base with a cylindrical side wall, (2) a spool disposed within the bucket, wherein the spool includes bearing means coupled to a bottom plate of the spool for freely resting and supporting the spool upon the base so that the spool is free from attachment within the bucket to allow the spool to be rotated within the bucket and to allow the spool to be lifted and removed from the bucket, and (3) a spool having a round bottom plate and a round top plate wherein peripheral edges of both the round top and bottom plates of the spool concentrically and vertically retain the spool within the bucket during rotation of the spool.

VII. Whether Chong in combination with Harrill render obvious under 35 U.S.C. § 103 claim 33 which is directed to an elongate flexible member storing device including the combination of (1) a bucket having a base with a cylindrical side wall, (2) a spool disposed within the bucket, wherein the spool includes bearing means coupled to a bottom plate of the spool for freely resting and supporting the spool upon the base so that the spool is free from attachment within the bucket to allow the spool to be rotated within the bucket and to allow the spool to be lifted and removed from the bucket, (3) a spool having a round bottom plate and a round top plate wherein peripheral edges of both the round top and bottom plates of the spool concentrically and vertically retain the spool within the bucket during rotation of the spool, and (4) a footplate secured to an exterior of the base of the bucket, wherein the footplate has a substantially horizontal portion extending beyond the side wall so as to permit force to be applied to the footplate for stabilizing the bucket during rotation of the spool.

Grouping of Claims

The following groupings of claims are made solely in the interest of consolidating issues and expediting this Appeal. No grouping of claims is intended to be nor should be interpreted as being any form of admission or a statement as to the scope or obviousness of any limitations.

Claims 1, 16 and 37 relate to a device for storing an elongate flexible member comprising a container having a base and a side wall, a spool disposed within the container free from attachment to the container to allow the spool to be rotated within the container, and a foot plate secured to an exterior of the base of the container, wherein the foot plate includes a substantially horizontal surface which extends beyond the side wall so that force may be applied to the horizontal surface for stabilizing the device as the spool is rotated. Independent claim 1 has been rejected under 35 U.S.C. § 103 as being unpatentable over Harrill in view of Chong and further in view of Schwartz. Independent claim 37 has been rejected under 35 U.S.C. § 103 as being unpatentable over Chong in view of Harrill.

Claims 17-19, 22, 24, 26, 33, 34 and 36 are considered by Applicant to stand independently of claims 1, 16 and 37. Claims 17-19, 22, 24, 26, 33, 34 and 36 relate to an elongate flexible member storing device comprising a container such as a bucket having a base and a cylindrical side wall, a spool disposed within the container free from attachment to the container, means for rotating at least a portion of the spool within the container and means for retaining the spool vertically and concentrically within the container free from attachment to the container so that the spool may be removed from the container as one piece. The spool includes a bottom freely resting within the container, a top and a column vertically mounted between the top and the bottom independent of the base. The side wall engages peripheral edges of the top and bottom of the spool to concentrically and vertically retain the spool within the container during rotation of the spool.

Dependent claim 33 depends from independent claim 18 and is considered by Applicant to stand independently of independent claim 18 since claim 33 further defines the elongate flexible member storing device of claim 18 as having a foot plate secured to an exterior

of a base of the bucket. The foot plate has a substantially horizontal portion extending beyond the side wall so as to permit force to be applied to the foot plate for stabilizing the bucket during rotation of the spool.

The reasons for this grouping of the claims will be further apparent from the arguments below.

Argument

Sections I, II and III are directed to objections to the drawings under 37 CFR §1.83(a) and rejections of the specification and claims under 35 U.S.C. § 112. The amendments referred to in Sections I, II and III which were presented in an Amendment After Final and a Supplemental Amendment After Final are believed to overcome the objections and rejections under 35 U.S.C. § 112.

The arguments as set forth in Sections IV-VII are directed to the rejection of claims 1, 16-19, 22, 24, 26, 33, 34, 36 and 37 under 35 U.S.C. § 103.

I. The drawings are in compliance under 37 CFR § 1.83(a)

The Examiner objected to the drawings under 37 CFR § 1.83(a). In particular, it was asserted that the locking rim which surrounds the rim of the container (claim 1), the handle of claim 18, the wire of claim 20, the hose of claim 21, and the bearing balls of claim 24 are not shown. In response, claim 1 is amended to delete the limitation of a retainer including a locking rim. Claim 18 is amended to delete the feature of a handle coupled to the side wall for carrying the bucket so that the side wall of the bucket is substantially upstanding. Claims 20 and 21 are canceled. Claim 24 is amended to delete the feature of a bearing unit having a top race secured to the bottom plate, a bottom race resting upon the base of the bucket, and bearing balls therebetween.

II. The specification and the claims, as amended, are in compliance with 35 U.S.C. § 112, second paragraph

The specification was objected to under 35 U.S.C. §112 for not providing support for the invention now claimed, i.e., for the retainer to be releasably coupled to the container or for the rim to releasably engage the rim of the container. In response, claim 1 is amended to

delete the feature of a device having a retainer releasably coupled to the container and having rim releasably engaging the rim of the container. As discussed above, claims 2 and 15 are canceled. Claims 1 and 16, as now presented, overcome the rejection under 35 U.S.C. §112, first paragraph.

III. Claims 1, 2, 15-22, 24, 26, 33, 34, 36 and 37, as amended, are in compliance with 35 U.S.C. § 112, second paragraph.

The Examiner rejected claims 1, 2, 15-22, 24, 26, 33, 34, 36 and 37 as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. To overcome the rejection under 35 U.S.C. § 112, second paragraph, it was suggested that -- an exterior of -- should be inserted before "the base" in claims 33 and 37. Claims 33 and 37 have been amended as suggested by the Examiner. It was further asserted that the recitations "hole defined by side wall" "to receive" and "therebetween" are not clear. In response, claims 1, 15, 18, 34 and 37 are amended to further define how the hole extends through the respective walls or top. Claim 19 is amended to specify that the first and second access holes have a circumference large enough to receive the cord through the first and second access holes.

It was further asserted that "the flat surface" in claim 15, "the bottom plate" and "the top" in claim 24, and "the top plate" in claim 34 lack antecedent basis. Claim 15 is canceled. Claim 24 is amended to delete the limitation including "the bottom plate" and is further amended to insert --plate-- after "top". Claim 34 depends from independent claim 18. Independent claim 18 specifically recites that the spool includes "a round top plate having a second access hole extending therethrough."

It was further asserted that the claims recite functions which lack sufficient structures or necessary structural cooperation between the structures to enable the functions to be effected. In particular, it was asserted that "to hold the spool within the container" in claim 1 is not sufficiently supported since the container only has one base which can be square and one sidewall which can be a straight wall. In response, claim 1 is amended to recite a cylindrical sidewall. Claim 18 was previously directed to a device including a cylindrical sidewall. It is

believed that claim 1, as amended, recites sufficient structures and structural cooperation to support the functions set forth in claim 1.

It was further asserted that claim 18, which recites "the round top plate retains the elongate flexible member concentrically around the outer surface of the column", lacks sufficient structure. Claim 18 is amended to recite that "the round top plate and the round bottom plate retain the elongated flexible member concentrically around the outer surface of the column." Claim 18 is directed to a device which includes a spool having a round bottom plate, a round top plate and column vertically mounted between the round top plate and the round bottom plate independent of the base. The round top plate and the round bottom plate therefore retain the elongate flexible member concentrically around the outer surface of the column when the spool is within the bucket and when the spool is removed from the bucket.

It is further asserted that in claim 22, which recites that the flexible member "passes through the cavity and through the second access hole", lacks sufficient structure to support the function. It is further asserted that claim 36, which recites that the "the flexible member passes through the cavity and through the hole in the top plate of the spool", lacks sufficient structure. As discussed above, the claims have been amended to further define how the access holes extend through the sidewalls or the top of the spool. Accordingly, it is believed that the claims, as amended, recite sufficient structure or structural cooperation between the structures to enable the second end of the flexible member to pass through the second access hole in claim 18 and to further enable the second end of the flexible member to pass through the cavity and through the hole in the top plate of the spool in claim 36.

With respect to claim 17, it was asserted that the term "concentrically" is unclear. Claim 17 is amended to recite "a cylindrical sidewall". Thus, spool is retained vertically and concentrically within the container having a cylindrical sidewall.

With respect to claim 18, it was asserted that "for freely resting" is an incomplete phrase. However, claim 18 specifically recites "bearing means coupled to the bottom plate for freely resting and supporting the spool upon the base so that the spool is free from attachment

within the bucket." Applicant respectively submits that "for freely resting" is a complete phrase when read in context with the remainder of the claim.

With respect to claim 24, it was asserted that the purpose of the second bearing unit was unclear. Claim 24 is amended to delete the limitation of "a bearing unit having a top race secured to the bottom plate, a bottom race resting upon the base of the bucket, and bearing balls therebetween." With respect to claim 26 is was asserted that "extending through" is an incomplete phrase and "and a substantial ... the spool" makes little sense. Claim 26 is amended to correct this typographical error. Claim 26, as amended, recites that "the first access hole of the bucket comprises an elongated slot extending through and along a substantial length of the sidewall of the bucket." Lastly, in claim 34, is was asserted that how the disk defines a second access hole is unclear. Claim 34 is amended to recite that the second access hole extends through the disk.

IV. Claims 1, 16 and 37 are not obvious under 35 U.S.C. § 103.

A. Neither Harrill, Chong nor Schwartz teach or suggest an elongate flexible member storing device having a foot plate secured to an exterior of a base of a container wherein the foot plate has a generally horizontal surface extending below the base of the container beyond the side wall so that force may be applied to the horizontal surface for stabilizing the device as a spool is rotated and when the spool is being removed from the container.

Neither Harrill, Chong nor Schwartz teach or suggest "a foot plate secured to the base of the bucket; wherein the foot plate has a substantially horizontal portion extending beyond the sidewall so as to permit force to be applied to the footplate for stabilizing the bucket during rotation of the spool." (see Office Action mailed on March 1, 1994). The Examiner specifically acknowledged that Harrill fails to disclose a footplate secured to the container base.

Thus, to reject claims 1, 16 and 37, the Examiner has taken the position that table 10 of Chong constitutes Applicant's claims footplate. This characterization is inaccurate and improper. Chong merely shows table 10 rotatably mounted to pan 16. Table 10 does not include a substantially horizontal portion which extends beyond the sidewall of pan 16. As a result, table

10 lacks sufficient surface area for receiving force from a user's foot or feet to stabilize the bucket while the spool is being rotated by the user's hands or other devices, or as the spool is being lifted from the bucket.

Applicant's claims 1 and 16 each specifically provide an elongate flexible member storing device having a footplate secured to an exterior of a base of a container wherein the footplate has a generally horizontal surface extending below the base of the container beyond the side wall so that force may be applied to the horizontal surface for stabilizing the device as the spool is rotated and when the spool is being removed from the container. Neither Chong, Harrill nor Schwartz, alone or in combination, teach or suggest this structure. Thus, the rejections of claims 1 and 16 under 35 U.S.C. § 103 based upon Harrill, Chong and Schwartz should be reversed and claims 1 and 16 be allowed.

Furthermore, Applicant's independent claim 37 specifically provides an elongate flexible member storing device having a foot plate fixedly coupled to an exterior of the base of the container, wherein the foot plate includes a substantially horizontal portion which extends beyond the side wall of the container for stabilizing the container during rotation of the spool. Neither Chong nor Harrill teach or suggest this structure. Thus, the rejection of independent claim 37 under 35 U.S.C. § 103 based upon Chong in combination with Harrill should be reversed and claim 37 be allowed.

V. Independent claim 17 is not obvious under 35 U.S.C. § 103

Independent claim 17 is directed to a device including a spool which can be easily lifted and removed from the container to permit cleaning and conditioning of the container, the spool and the elongate flexible member. Applicant's device achieves this advantage by providing a container having a base and a cylindrical side wall with a spool disposed within the container free from attachment to the container. Means are provided for rotating the spool within the container. In addition, means are provided for retaining the spool vertically and concentrically within the container free from attachment to the container so that the spool may be removed from the container as one piece. These features enable the spool of Applicant's invention to be easily lifted and removed from the bucket for cleaning and conditioning. Neither

Harrill, Chong nor Schwartz, alone or in combination, disclose, teach or suggest a device which includes these key elements which are necessary to permit the spool to be easily lifted and removed from the container.

A. Neither Harrill, Chong nor Schwartz teach or suggest an elongate flexible member storing device including a spool having a bottom freely resting within the container so that the spool is disposed within the container free from attachment to the container.

i) Harrill fails to teach or suggest a spool having a bottom freely resting within the container so that the spool is disposed within the container free from attachment to the container.

The Examiner acknowledges that Harrill discloses a container having a "rotatably mounted spool 10." However, the Examiner asserts that "it would be obvious to a person having ordinary skill in the art to omit the screw 54 of Harrill so that the spool may be readily removed from the container as it is well established that omission of an element and its function where not needed is obvious."

The Examiner's characterization of screw 54 in Harrill as not being needed is incorrect. In contrast to the Examiner's assertions, it is neither obvious nor feasible to eliminate screw 54 of Harrill. Screw 54 of Harrill is indispensable for maintaining spool 28, 30 within the container during transport and during dispensing of cords from the container of Harrill. As shown by Figures 1 and 2 of Harrill, the "base" of housing 12 is not rearwall 18, but is instead leg portion 66,68. Handle 64 is located opposite leg portion 66,68. Consequently, container 12 is operated and carried with the sidewalls in a generally horizontal orientation. As a result, it is necessary for Harrill to rotatably mount the spool within housing 12 to guide the rotation of the spool within housing 12 and to prevent the spool from falling out of housing 12 during operation and transportation of the device. Accordingly, it is necessary for Harrill to provide threaded fastener 54 for rotatably mounting the spool to housing 12.

ii) Chong fails to teach or suggest a spool having a bottom freely resting within the container so that the spool is disposed within the container free from attachment to the container.

It has been the Examiner's position that Chong teaches a device having a spool disposed within and unattached to a container. In particular, the Examiner has asserted that "It would have been obvious to a person of ordinary skill in the art to provide the spool of Harrill as being unattached to the container as taught by Chong to reduce the number of parts and costs." (See Office Action mailed on February 7, 1995).

However, the Examiner's assertion that Chong teaches a spool freely resting within a container and unattached to a container is completely inaccurate and improper. Turntable 26 of Chong does not freely rest within pan 16 unattached to pan 16. In contrast to the Examiner's assertions, turntable 26 of Chong is "rotatably mounted on and within pan 16." (Column 2, lines 33-37; Column 1, lines 39-42). In fact, Chong specifically states that cover 32 may be removed to replenish the supply of cable 24 within the dispenser. (See Column 2, lines 56-57). However, Chong fails to provide any teaching or suggestion that turntable 26 may also be removed. Moreover, Chong specifically states that pan 16 is "rotatably mounted on table 10 by means of a first ball bearing assembly 18." Similarly, Chong specifically states that turntable 26 is "rotatably mounted on pan 16 by a second, smaller diameter ball bearing assembly 28." (Column 2, lines 6-7 and 11-12). Thus, neither Chong nor Harrill teach or suggest an elongate flexible member storing device including a spool having a bottom freely resting within the container so that the spool is disposed within the container free from attachment to the container.

B. Neither Harrill nor Chong teach or suggest means for retaining the spool vertically and concentrically within the container free from attachment to the container so that the spool may be removed from the container as one piece.

i) Harrill fails to teach or suggest means for retaining the spool vertically and concentrically within the container free from attachment to the container so that the spool may be removed from the container as one piece.

The Examiner asserts that Harrill discloses a container having a rotatably mounted spool having substantially all the claimed features of independent claim 17.

This assertion is incorrect. Harrill concentrically and vertically retains reel 10 within container 12 with screw 54. Although screw 54 concentrically and vertically retains the spool within the container, screw 54 does not retain reel 10 vertically and concentrically within housing 12 free from attachment to housing 12 so that reel 10 may be removed from housing 12 as one piece. Absent screw 54, reel 10 would fall out of housing 12 through the open front end 14. In addition, absent screw 54, reel 10 would pivot about central portion 20 and would tip and become pinched against housing 20. Omission of screw 54 would also permit cable to become unwound and jammed beneath the portion of the reel which is tipped upward. Thus, Harrill fails to teach or suggest means for retaining the spool vertically and concentrically within the container free from attachment to the container so that the spool may be removed from the container as one piece.

ii) Chong fails to teach or suggest means for retaining the spool vertically and concentrically within the container free from attachment to the container so that the spool may be removed from the container as one piece.

It has been the Examiner's position that Chong teaches a device having a spool disposed within and unattached to a container (See Office Action mailed on February 7, 1995). Thus, it is apparently the Examiner's position that wall 20 of Chong vertically and concentrically retains turntable 26 within pan 16 free from attachment to the container so that the turntable may be removed from the container as one piece.

The Examiner's apparent characterization of Chong fails to comport with the clear and definite structure of the cable dispensing device of Chong illustrated in the figures and described in the specification of Chong. Wall 20 of Chong does not vertically and concentrically retain turntable 26 within pan 16. Instead, Chong vertically and concentrically retains turntable 26 within pan 16 by means of ball bearing assembly 28. Ball bearing assembly 28 attaches turntable 26 to pan 16. Chong specifically states that turntable 26 is "rotatably mounted on pan

16 by a second, smaller diameter ball bearing assembly 28." (Column 2, lines 6-7 and 11-12). Thus, it is clear that Chong fails to teach or suggest means for retaining a spool vertically and concentrically within a container free from attachment to the container so that the spool may be removed from the container as one piece. Thus, neither Harrill nor Chong teach or suggest means for retaining the spool vertically and concentrically within the container free from attachment to the container so that the spool may be removed from the container as one piece.

C. No motivation is provided in either Harrill or Chong for combining the extension cord reel of Harrill and the cable dispenser of Chong.

The Examiner has taken the position that it would be obvious to combine the extension cord reel of Harrill with the cable dispenser of Chong. With respect to the teachings of those references, the Examiner has stated that "It would have been obvious to a person having ordinary skill in the art to alternatively provide the spool of Chong as the one taught by Harrill to facilitate removal of the spool from the container." (see Office Action dated July 10, 1995).

However, the Examiner has failed to lay any foundation or support for the assertion that it would be obvious to combine the extension cord reel of Harrill with the cable dispenser of Chong. Neither Harrill nor Chong provide any teaching or suggestion that it would be advantageous to "facilitate removal of the spool from the container." This is due to the fact that neither Harrill nor Chong recognize the problem recognized by Applicant. In particular, neither Harrill nor Chong recognize that in heavy duty industrial applications, the bucket, the spool and the elongate flexible member often require cleaning and conditioning. In recognition of this problem, Applicant has invented a novel combination of features which enable the spool to be easily lifted and removed from the bucket to permit cleaning and conditioning of the bucket, the spool and the elongate flexible member. Because neither Harrill nor Chong recognize this problem, neither Harrill nor Chong teach or suggest the advantages of removing the spool from the container. Because both Harrill and Chong fail to provide any motivation for the combination of the extension cord reel of Harrill and the cable dispenser of Chong, the Examiner's assertion that it would be obvious to combine Chong and Harrill is improper.

Moreover, both Harrill and Chong specifically teach against such a combination. Although both the devices of Harrill and Chong happen to contain elongate flexible members, the devices of Harrill and Chong serve completely different functions. Harrill discloses an extension cord reel which allows a user to repeatably dispense and retract the same extension cord.

In contrast, Chong discloses a cable dispenser which dispenses a single prewound roll of cable. This is reflected by the fact that Chong fails to disclose or teach any mechanism or means for rewinding the cable after it has been dispensed from pan 16. As a result, once the cable is completely dispensed, the dispenser is replenished with a fresh supply of cable by simply dropping a newly supply of a prewound coil of cable about cone 30. Chong specifically states that cover 32 may be removed for this purpose. (see Column 2, lines 56-57).

To replace table 26 of cone 30 of Chong with reel 10 of Harrill, which has a top plate, would prevent replenishing the dispenser of Chong with a fresh prewound supply of cable. In addition, the limited size of dispensing opening 22 would prevent adequate rewinding of any flexible member along the entire vertical length of reel 10. Thus, because replacing table 26 and cone 30 of Chong with the reel 10 of Harrill would prevent Chong from performing its intended function, it would not be obvious to combine the extension cord reel of Harrill and the cable dispenser of Chong.

D. Even assuming, arguendo, that it were obvious to combine the extension cord reel of Harrill with the cable dispenser of Chong, such a combination would still fail to teach or suggest (1) a spool having a bottom freely resting within a container so that the spool is disposed within the container free from attachment to the container and (2) means for retaining the spool vertically and concentrically within the container free from attachment to the container so that the spool may be removed from the container as one piece.

Even assuming, arguendo, that it were obvious to combine the spool of Harrill with the container of Chong, such a combination would still fail to result in an elongate flexible member storing device having both a spool having (1) a bottom freely resting within the container so that the spool is disposed within the container free from attachment and (2) means

for retaining the spool vertically and concentrically within the container free from attachment to the container so that the spool may be removed from the container as one piece. As discussed above in Sections V, subsections A and B, neither Harrill nor Chong teach or suggest either (1) a bottom freely resting within the container so that the spool is disposed within the container free from attachment or (2) means for retaining the spool vertically and concentrically within the container free from attachment to the container. In particular, turntable 26 and cone 30 of Chong are rotatably mounted to pan 16 to vertically and concentrically retain turntable 26 and cone 30 within pan 16. Reel 10 of Harrill is also rotatably mounted to housing 12 by screw 54 to vertically and concentrically retain reel 10 within housing 12. Thus, even if it were obvious to combine the teachings of Chong and Harrill, as asserted by the Examiner, the combination would result in reel 10 being rotatably mounted to pan 16 to vertically and concentrically retain reel 10 within pan 16. Such a hypothetical combination would fail to constitute an elongate flexible member storing device including (1) a spool having a bottom freely resting within the container so that the spool is disposed within the container free from attachment to the container and (2) means for retaining the spool vertically and concentrically within the container free from attachment to the container so that the spool may be removed from the container as one piece.

E. CONCLUSION: Independent claim 17 is not obvious over Harrill in view of Chong and Schwartz because the Examiner's combination is the result of impermissible "hindsight" analysis

Much has been written concerning the use of "hindsight" or the use of an Applicant's teachings, to reject claims based on modifications of prior art which does not specifically teach or suggest such modifications. The courts have universally condemned such actions and have upheld the validity of patent claims in which such hindsight was employed. Notable among the decisions relating to the use of impermissible hindsight is the decision of the Supreme Court of the United States in Diamond Rubber Co. of New York v. Consolidated Rubber Tire Co, 220 U.S. 428, 31 S. Ct. 444 (1911). In this case the Supreme Court stated:

> [m]any things, and the patent law abounds in illustrations, seem obvious after they have been done, and,'in the light of the accomplished result,' it is often a matter of wonder how they so

> long 'eluded the search of the discoverer and set at defiance the speculations of inventive genius' .... Knowledge after the event is always easy, and problems once solved present no difficulties, indeed, may be represented as never having had any ... . 220 U.S. at 434, 435, 31 S. Ct. at 447 (citation omitted).

In a similar vein, the Court of Customs and Patent Appeals stated in the case of In re Kamm and Young, 172 U.S.P.Q. 298 (C.C.P.A 1972), that the basic mandate inherent in 35 U.S.C. § 103 is that piecemeal reconstruction of prior art patents in the light of Applicant's disclosure shall not be the basis for holding of obviousness. Similarly, in the case of Kubik Inc. v. American Hydrostatics Inc., 20 U.S.P.Q.2d 1061, 1067 (E.D. Mich. 1991), it was stated that:

> Approaches to obviousness determinations which focus merely on identifying and tabulating 'missing elements' in hindsight retrospect 'imbue one of ordinary skill in the art with knowledge of the invention in suit, when no prior art reference or references of record convey or suggest that knowledge, and, the 'insidious effect of a hindsight syndrome where that which only the inventor taught is used against its teacher,' (quoting W.L. Gore & Assocs., Inc. v. Garlock, Inc., 220 U.S.P.Q. 303 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984).

The Federal Circuit has also more recently cautioned against employing hindsight by using an Applicant's disclosure as a blueprint to reconstruct the claimed invention out of the teachings in the prior art. Grain Processing Corp. v. American Maize-Products Co., 5 U.S.P.Q.2d 1788, 1792 (Fed. Cir. 1988).

In addition to its decisions against using hindsight, the Federal Circuit has also cautioned against focusing on the obviousness of the differences between the claimed invention and the prior art rather than on the obviousness of the claimed invention as a whole. Hybritech Inc. v. Monoclonal Antibodies, Inc., 231 U.S.P.Q. 81, 93 (Fed. Cir. 1987), cert. denied, 480 U.S. 947 (1987).

In the present case, the Examiner's assertion that claim 17 is obvious based upon the combined teachings of Harrill, Chong and Schwartz amounts to nothing more than impermissible hindsight analysis. As set forth above, neither Harrill nor Chong teach or suggest

a spool having a bottom freely resting within a container or bucket so that the spool is disposed within the container free from attachment to the container. (**see Sections V. A. supra**). Furthermore, neither Harrill nor Chong teach or suggest means for retaining the spool vertically and concentrically within the container free from attachment to the container so that the spool may be removed from the container as one piece. (**see Section V. B. supra**). As further set forth above, neither Harrill nor Chong recognize any advantage to facilitating removal of the spool because neither reference recognizes the basic problem which Applicant solves. (**see Section V. C. supra**). Furthermore, to replace the turntable and cone of Chong with the reel of Harrill would destroy the intended cable dispensing function of Chong. (**see Section V. C. supra**). Lastly, as set forth above, such a hypothetical combination would still result in reel 10 being rotatably mounted to pan 16 of Chong in order to vertically and concentrically retain reel 10 within pan 16. (**see Section V. D. supra**). As a result, in order to reject independent claim 17 as being obvious, the Examiner has had to piecemeal reconstruct individual features from Harrill, Chong and Schwartz using the teachings of Applicant's invention. The Examiner has simply identified and tabulated missing elements despite the lack of any teachings or suggestions for such asserted combinations. Thus, the rejection of independent claim 17 should be reversed and claim 17 be allowed.

VI. Independent claims 18 and 36 and dependent claims 19, 22, 24, 26, 33 and 34 are not obvious under 35 U.S.C. § 103

Claims 18, 19, 22, 24, 26, 33 and 34 are directed to a device including a spool which can be easily lifted and removed from the container to permit cleaning and conditioning of the bucket, the spool and the elongate flexible member. Applicant's device achieves this advantage with several key features. First, the device includes a bucket having a base and a generally cylindrical sidewall which holds the spool. Both independent claims 18 and 36 recite that the spool may be "lifted" and removed from the bucket. Gravity maintains the spool within the bucket when the bucket and spool are being transported between locations.

Second, the bottom of the spool includes bearing means or a bearing member which freely rests and supports the spool upon the base of the bucket so that the spool so that the spool may be rotated free from attachment within the bucket.

Third, the spool includes both a top and a bottom plate. The top plate and the bottom plate perform two functions. The plates retain the elongate flexible member around the column when the spool is disposed within the bucket and also when the spool is removed from the bucket. At the same time, the plates have peripheral edges which engage the sidewalls of the bucket to concentrically and vertically retain the spool within the bucket as the spool is being rotated. These three features enable the spool of Applicant's invention to be rotated within the bucket and also enable the spool to be easily lifted and removed from the bucket for cleaning and conditioning. Neither Chong nor Harrill, alone or in combination, disclose, teach or suggest a device which includes each and every one of these three key elements which enable the spool to be easily lifted and removed from the bucket.

A. **Neither Chong nor Harrill teach or suggest bearing means coupled to the bottom plate of the spool for freely resting and supporting the spool upon the base of the bucket so that the spool is free from attachment within the bucket to allow the spool to be rotated within the bucket and to allow the spool to be lifted and removed from the bucket.**

i) **Chong fails to teach or suggest bearing means coupled to the bottom plate of the spool for freely resting and supporting the spool upon the base of the bucket so that the spool is free from attachment within the bucket to allow the spool to be rotated within the bucket and to allow the spool to be lifted and removed from the bucket.**

It has been the Examiner's position that Chong teaches a device having a spool disposed within and unattached to a container. In particular, the Examiner has asserted that "It would have been obvious to a person having ordinary skill in the art to provide the spool of Harrill as being unattached to the container as taught by Chong to reduce the number of parts and costs." (See Office Action mailed on February 7, 1995).

However, Applicant respectfully disagrees with the Examiner's assertion that Chong teaches a spool freely resting within a container and unattached to a container. Chong fails to disclose, teach or suggest a spool having a bottom with bearing means which freely rest and support the spool upon the base of the bucket so that the spool is free from attachment within the bucket. In contrast, turntable 26 of Chong is "rotatably mounted on and within pan 16." (Column 2, lines 33-37; Column 1, lines 39-42). In fact, Chong specifically states that cover 32 may be removed to replenish the supply of cable 24 within the dispenser. (See Column 2, lines 56-57). However, Chong fails to provide any teaching or suggestion that turntable 26 may also be removed. Moreover, Chong specifically states that pan 16 is "rotatably mounted on table 10 by means of a first ball bearing assembly 18." Similarly, Chong specifically states that turntable 26 is "rotatably mounted on pan 16 by a second, smaller diameter ball bearing assembly 28." (Column 2, lines 6-7 and 11-12). Thus, it is clear that Chong fails to teach or suggest a spool having a bottom plate having bearing means for freely resting and supporting the spool upon the base so that the spool is free from attachment within the bucket to allow the spool to be rotated within the bucket and to allow the spool to be lifted and removed from the bucket.

ii) **Harrill fails to teach or suggest an elongate flexible member storing device having bearing means coupled to the bottom plate of the spool for freely resting and supporting the spool upon the base of the bucket so that the spool is free from attachment within the bucket to allow the spool to be rotated within the bucket and to allow the spool to be lifted and removed from the bucket.**

The Examiner acknowledges that Harrill discloses a container having a "rotatably mounted spool 10." However, the Examiner asserts that "it would be obvious to a person having ordinary skill in the art to omit the screw 54 of Harrill so that the spool may be readily removed from the container as it is well established that omission of an element and its function where not needed is obvious."

Applicant respectfully disagrees with the Examiner's characterization of screw 54 in Harrill as not being needed. In contrast to the Examiner's assertions, it is neither obvious nor feasible to eliminate screw 54 of Harrill. Screw 54 of Harrill is indispensable for maintaining

spool 28, 30 within the container during transport. Without screw 54, reel 10 would fall out of the open front end 14 of housing 12 of the device of Harrill. In addition, screw 54 is necessary for concentrically and vertically retaining the spool during rotation of the spool. Because Harrill fails to teach or suggest a spool having round top and bottom plates which have peripheral edges which engage the side walls, the device of Harrill must include threaded fastener 54 to concentrically and vertically retain the spool during rotation. The elimination of threaded fastener 54, as suggested by the Examiner, would cause the spool to tip and become pinched against the container which would inhibit rotation of the spool. In addition, the tipped bottom of the spool would also permit the cable to become unwound and jammed beneath the portion of the spool which is tipped upward. As a result, it would not be prudent nor obvious to eliminate threaded fastener 54 as suggested by the Examiner.

B. Neither Chong nor Harrill teach or suggest a spool having a round top plate and a round bottom plate having peripheral edges which engage a side wall of the bucket to concentrically and vertically retain the spool within the bucket during rotation of the spool and to retain an elongate flexible member concentrically around the outer surface when the spool is within the bucket and when the spool is removed from the bucket.

i) Chong fails to teach or suggest a spool having a round top plate and a round bottom plate having peripheral edges which engage a side wall of the bucket to concentrically and vertically retain the spool within the bucket during rotation of the spool and to retain an elongate flexible member concentrically around the outer surface of a column of the spool when the spool is within the bucket and when the spool is removed from the bucket.

Chong merely discloses a turntable 26 having an integrally formed cable centering cone 30 rotatably mounted to a pan 16. Chong fails to teach or suggest a spool having a round top plate and a round bottom plate having peripheral edges which engage the side walls to concentrically and vertically retain the spool within a container. In addition, Chong fails to teach or suggest a round top plate and a round bottom plate which retain the elongate flexible member

concentrically around the outer surface of the column when the spool is within the container and when the spool is removed from the container.

ii) **Harrill fails to teach or suggest a spool having a round top plate and a round bottom plate having peripheral edges which engage a side wall of the bucket to concentrically and vertically retain the spool within the bucket during rotation of the spool and to retain and elongate flexible member concentrically around the outer surface of a column of the spool when the spool is within the bucket and when the spool is removed from the bucket.**

Harrill fails to teach or suggest a spool having round top and bottom plates having peripheral edges which engage the side wall of the bucket to concentrically and vertically retain the spool within the bucket. Harrill concentrically and vertically retains reel 10 within container 12 with screw 54. Although screw 54 concentrically and vertically retains the spool within the container, screw 54 does not retain reel 10 vertically and concentrically within housing 12 free from attachment to housing 12 so that reel 10 may be removed from housing 12 as one piece. Absent screw 54, reel 10 would fall out of housing 12 through the open front end 14. In addition, absent screw 54, reel 10 would pivot about central portion 20 and would tip and become pinched against housing 20. Omission of screw 54 would also permit cable to become unwound and jammed beneath the portion of the reel which is tipped upward. Thus, the top and bottom plates of reel 10 of Harrill do not have peripheral edges which engage the side wall of housing 12 to vertically and concentrically retain reel 10 within housing 12. Consequently, Harrill fails to teach or suggest this feature of Applicant's invention.

C. **No motivation is provided in either Harrill or Chong for combining the extension cord reel of Harrill and the cable dispenser of Chong.**

The Examiner has taken the position that it would be obvious to combine the extension cord reel of Harrill with the cable dispenser of Chong. With respect to the teachings of those references, the Examiner has stated that "It would have been obvious to a person having ordinary skill in the art to alternatively provide the spool of Chong as the one taught by Harrill to facilitate removal of the spool from the container." (see Office Action dated July 10, 1995).

However, the Examiner has failed to lay any foundation or support for the assertion that it would be obvious to combine the extension cord reel of Harrill with the cable dispenser of Chong. Neither Harrill nor Chong provide any teaching or suggestion that it would be advantageous to "facilitate removal of the spool from the container." This is due to the fact that neither Harrill nor Chong recognize the problem recognized by Applicant. In particular, neither Harrill nor Chong recognize that in heavy duty industrial applications, the bucket, the spool and the elongate flexible member often require cleaning and conditioning. In recognition of this problem, Applicant has invented a novel combination of features which enables the spool to be easily lifted and removed from the bucket to permit cleaning and conditioning of the bucket, the spool and the elongate flexible member. Because neither Harrill nor Chong recognize this problem, neither Harrill nor Chong teach or suggest the advantages of removing the spool from the container. Because both Harrill and Chong fail to provide any motivation for the combination of features of the extension cord of Harrill and the cable dispenser of Chong, the Examiner's assertion that it would be obvious to combine Chong and Harrill is improper.

Moreover, in addition to failing to provide any motivation for providing the container of Chong with the spool of Harrill, both Harrill and Chong specifically teach against such a combination. Although both the devices of Harrill and Chong happen to contain elongate flexible members, the devices of Harrill and Chong serve completely different functions. Harrill discloses an extension cord reel which allows a user to repeatably dispense and retract the same extension cord. In contrast, Chong discloses a cable dispenser which dispenses a single prewound roll of cable. Once the cable has been completely exhausted, a fresh, new prewound roll of cable is dropped over cone 30 onto table 26 for additional dispensing. This is reflected by the fact that Chong fails to disclose or teach any mechanism or means for rewinding the cable after it has been dispensed from pan 16. As a result, once the cable is completely dispensed, the dispenser is replenished with a fresh supply of cable by simply dropping a prewound coil of cable about cone 30. Chong specifically states that cover 32 may be removed for this purpose. (see Column 2, lines 56-57).

To alternatively provide the device of Chong with reel 10 of Harrill having a top plate would prevent replenishing the dispenser of Chong with a fresh prewound supply of cable. In addition, the limited size of dispensing opening 22 would prevent adequate rewinding of any flexible member along the entire vertical length of reel 10. Thus, because combining the spool of Harrill with the device of Chong would prevent Chong from performing its intended function, it would not be obvious to combine the extension cord reel of Harrill and the cable dispenser of Chong.

D. Even assuming, arguendo, that it were obvious to combine the extension cord reel of Harrill with the cable dispenser of Chong, such a combination would still fail to teach or suggest (1) a bucket having a base with a cylindrical side wall for housing a spool, (2) a spool disposed within the bucket, wherein the spool includes bearing means coupled to a bottom plate of the spool for freely resting and supporting the spool upon the base so that the spool is free from attachment within the bucket to allow the spool to be rotated within the bucket and to allow the spool to be lifted and removed from the bucket, and (3) a spool having a round bottom plate and a round top plate wherein peripheral edges of both the round top plate and bottom plate concentrically and vertically retain the spool within the bucket during rotation of the spool.

Even assuming, arguendo, that it were obvious to combine the spool of Harrill with the container of Chong, such a combination would still fail to result in an elongate flexible member storing device having (1) a bucket having a base with a cylindrical side wall for housing a spool, (2) a spool disposed within the bucket, wherein the spool includes bearing means coupled to a bottom plate of the spool for freely resting and supporting the spool upon the base so that the spool is free from attachment within the bucket to allow the spool to be rotated within the bucket and to allow the spool to be lifted and removed from the bucket, and (3) a spool having a round bottom plate and a round top plate wherein peripheral edges of both the round top plate and bottom plate concentrically and vertically retain the spool within the bucket during rotation of the spool. As discussed above in Sections VI, subsections A and B, neither Harrill nor Chong teach or suggest either a bottom freely resting within the container so that the spool is disposed

within the container free from attachment or means for retaining the spool vertically and concentrically within the container free from attachment to the container. In particular, turntable 26 and cone 30 of Chong are rotatably mounted to pan 16 vertically and concentrically retain turntable 26 and cone 30 within pan 16. Reel 10 of Harrill is also rotatably mounted to housing 12 by screw 54 to vertically and concentrically retain reel 10 within housing 12. Thus, even if it were obvious to combine the teachings of Chong and Harrill, as asserted by the Examiner, the combination would result in reel 10 being rotatably mounted to pan 16. Such a hypothetical combination would fail to constitute an elongate flexible member storing device including a spool having a bottom freely resting within the container so that the spool is disposed within the container free from attachment to the container and round top and bottom plates having peripheral edges which engage the side walls of the bucket to retain the spool vertically and concentrically within the container free from attachment to the container so that the spool may be removed from the container as one piece.

E. CONCLUSION: Independent claims 18 and 36 and dependent claims 19, 22, 24, 26, 33 and 34 are not obvious over Chong in view of Harrill because the Examiner's combination is the result of impermissible "hindsight" analysis

Much has been written concerning the use of "hindsight" or the use of an Applicant's teachings, to reject claims based on modifications of prior art which does not specifically teach or suggest such modifications. The courts have universally condemned such actions and have upheld the validity of patent claims in which such hindsight was employed. Notable among the decisions relating to the use of impermissible hindsight is the decision of the Supreme Court of the United States in Diamond Rubber Co. of New York v. Consolidated Rubber Tire Co, 220 U.S. 428, 31 S. Ct. 444 (1911). In this case the Supreme Court stated:

> [m]any things, and the patent law abounds in illustrations, seem obvious after they have been done, and,'in the light of the accomplished result,' it is often a matter of wonder how they so long 'eluded the search of the discoverer and set at defiance the speculations of inventive genius' .... Knowledge after the event is always easy, and problems once solved present no difficulties,

> indeed, may be represented as never having had any ... . 220 U.S. at 434, 435, 31 S. Ct. at 447 (citation omitted).

In a similar vein, the Court of Customs and Patent Appeals stated in the case of In re Kamm and Young, 172 U.S.P.Q. 298 (C.C.P.A 1972), that the basic mandate inherent in 35 U.S.C. § 103 is that piecemeal reconstruction of prior art patents in the light of Applicant's disclosure shall not be the basis for holding of obviousness. Similarly, in the case of Kubik Inc. v. American Hydrostatics Inc., 20 U.S.P.Q.2d 1061, 1067 (E.D. Mich. 1991), it was stated that:

> Approaches to obviousness determinations which focus merely on identifying and tabulating 'missing elements' in hindsight retrospect 'imbue one of ordinary skill in the art with knowledge of the invention in suit, when no prior art reference or references of record convey or suggest that knowledge, and, the 'insidious effect of a hindsight syndrome where that which only the inventor taught is used against its teacher,' (quoting W.L. Gore & Assocs., Inc. v. Garlock, Inc., 220 U.S.P.Q. 303 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984).

The Federal Circuit has also more recently cautioned against employing hindsight by using an Applicant's disclosure as a blueprint to reconstruct the claimed invention out of the teachings in the prior art. Grain Processing Corp. v. American Maize-Products Co., 5 U.S.P.Q.2d 1788, 1792 (Fed. Cir. 1988).

In addition to its decisions against using hindsight, the Federal Circuit has also cautioned against focusing on the obviousness of the differences between the claimed invention and the prior art rather than on the obviousness of the claimed invention as a whole. Hybritech Inc. v. Monoclonal Antibodies, Inc., 231 U.S.P.Q. 81, 93 (Fed. Cir. 1987), cert. denied, 480 U.S. 947 (1987).

In the present case, the Examiner's assertion that independent claims 18 and 36 and dependent claims 19, 22, 24, 26, 33 and 34 are obvious based upon the combined teachings of Harrill, Chong and Schwartz amounts to nothing more than impermissible hindsight analysis.

The Examiner cannot point to any reference which teaches or suggest an elongate flexible member storing device which includes the novel combination of (1) a bucket having a

base with a cylindrical side wall for housing a spool, (2) a spool disposed within the bucket, wherein the spool includes bearing means coupled to a bottom plate of the spool for freely resting and supporting the spool upon the base so that the spool is free from attachment within the bucket to allow the spool to be rotated within the bucket and to allow the spool to be lifted and removed from the bucket, and (3) a spool having a round bottom plate and a round top plate wherein peripheral edges of both the round top and bottom plates of the spool concentrically and vertically retain the spool within the bucket during rotation of the spool.

As set forth above, neither Harrill nor Chong teach or suggest a spool having a bottom freely resting within a container or bucket so that the spool is disposed within the bucket free from attachment to the bucket. (**see Section VI. A. supra**). Furthermore, neither Harrill nor Chong teach or suggest top and bottom plates which engage the side wall of the bucket to retain the spool vertically and concentrically within the bucket free from attachment to the bucket so that the spool may be removed from the bucket as one piece. (**see Section VI. B. supra**). As further set forth above, neither Harrill nor Chong recognize any advantage to facilitating removal of the spool because neither reference recognizes the basic problem which Applicant solves. (**see Section VI. C. supra**). Furthermore, to replace the turntable and cone of Chong with the reel of Harrill would destroy the intended cable dispensing function of Chong. (**see Section VI. C. supra**). Lastly, as set forth above, such a hypothetical combination would still result in reel 10 being rotatably mounted to pan 16 of Chong in order to vertically and concentrically retain reel 10 within pan 16. As a result, in order to reject the claims as being obvious, the Examiner has had to piecemeal reconstruct individual features from Chong and Harrill using the teachings of Applicant's invention. The Examiner has simply identified and tabulated missing elements despite the lack of any teachings or suggestions for such asserted combinations. Thus, the rejection of independent claims 18 and 36 should be reversed and allowed. Claims 19, 22, 24, 26, 33 and 34 depend from independent claim 18 and should also be allowed for the same reasons.

VII. Dependent claim 33 is not obvious under 35 U.S.C. § 103.

Dependent claim 33 depends from independent claim 18 and is directed to an elongate flexible member storing device including a spool which can be easily lifted and removed from the bucket to permit cleaning and conditioning of the bucket, the spool and the elongate flexible member. Applicant's device achieves this advantage with several key features. First, the cylindrical device includes a bucket having a base and a generally cylindrical side wall which holds the spool. Gravity maintains the spool within the bucket when the bucket and the spool are being transported.

Second, the device includes a footplate secured to an exterior of the base of the bucket. The footplate has a substantially horizontal portion extending beyond the side wall so as to permit force to be applied to the footplate for stabilizing the bucket during rotation of the spool. In addition, the footplate also enables force to be applied to the bucket to hold the bucket as the spool is being removed from the bucket.

Third, the bottom of the spool includes bearing means which freely rest and support the spool upon the base of the bucket so that the spool may be rotated free from attachment within the bucket.

Fourth, the spool includes both a top and bottom plate. The top and bottom plate perform two functions. The plates retain the elongate flexible member around the column when the spool is disposed within the bucket and also when the spool is removed from the bucket. At the same time, the plates have peripheral edges which engage the side walls of the bucket to concentrically and vertically retain the spool within the bucket as the spool is being rotated.

As set forth in Sections IV and VI above, neither Chong nor Harrill, alone or in combination, teach or suggest the above novel combination of features. Thus, the rejection of dependent claim 33 based upon Chong and Harrill should be reversed and claim 33 should be allowed.

Conclusions

It is respectfully requested that the Office Action of July 10, 1995 finally rejecting claims 1, 16-19, 22, 24, 26, 33, 34, 36 and 37 be reversed and the claims allowed. With respect

to rejected claims 1, 16 and 37, the characterization of table 10 of Chong does not comport with the clear and definite structure illustrated Figures 1 and 2. With respect to rejected claims 17-19, 22, 24, 26, 33, 34 and 36, the characterization of Chong and Harrill in the Office Action does not comport with the clear and definite structure set forth in both references. In particular, neither Chong nor Harrill teach or suggest a spool disposed within a container free from attachment to the container or means for vertically and concentrically retaining the spool within the container free from attachment to the container. Moreover, the position that it would be obvious to provide the cable dispenser of Chong with the spool of Harrill as set forth in the Office Action is neither taught nor suggested in either of the references and amounts to nothing more than impermissible hindsight analysis.

Respectfully submitted,

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Appendix A

CLAIMS ON APPEAL

1. A device for storing an elongate flexible member having a length, a first end and a second end, the device comprising:

a container having a base, a cylindrical side wall having a rim opposite the base and defining an interior of the container, and a first access hole extending through the side wall;

a spool disposed within the container free from attachment to the container, the spool comprising:

a bottom freely resting upon the base of the container, a top having a second access hole extending therethrough, and a column vertically mounted between the top and the bottom, the column having a surface for winding the length of flexible member around, wherein the second end of the flexible member passes through the second access hole and wherein the first end of flexible member passes through the first access hole of the container;

a foot plate secured to an exterior of the base of the container, the foot plate having a generally horizontal surface extending below the base of the container beyond the side wall so that force may be applied to the horizontal surface for stabilizing the device as the spool is rotated and when the spool is being removed from the container,

the footplate further including mounting holes which extend through the foot plate for mounting the device; and

means for rotating the spool within the container.

16. The device of claim 1 wherein the mounting holes are spaced equidistantly about a perimeter of the container.

17. A device for storing an elongate flexible member having a length, a first end and a second end, the device comprising:

a container having a base, a cylindrical sidewall, and a first access hole defined through the side wall;

a spool disposed within the container free from attachment to the container, the spool comprising:

a bottom freely resting within the container, a top having a second access hole extending therethrough, and a column vertically mounted between the top and bottom independent of the base, the column having a surface for winding the length of flexible member around, wherein the second end of the flexible member passes through the second access hole and

wherein the first end of the flexible member passes through the first access hole of the container;

means for rotating the spool within the container; and

means for retaining the spool vertically and concentrically within the container free from attachment to the container so that the spool may be removed from the container as one piece.

18. A device for storing an elongate flexible member having a length, a first end and a second end, the device comprising:

a bucket having a base, a cylindrical sidewall integrally extending upward from the base and a first access hole extending through the sidewall;

a spool disposed within the bucket, the spool comprising:

a bottom having a round bottom plate and bearing means coupled to the bottom plate for freely resting and supporting the spool upon the base so that the spool is free from attachment within the bucket to allow the spool to be rotated within the bucket and to allow the spool to be lifted and removed from the bucket, a round top plate having a second access hole extending therethrough, and a column vertically mounted between the round top plate and the round

bottom plate independent of the base, the column having an outer surface for winding the length of flexible member around, wherein the round top plate and the round bottom plate retain the elongate flexible member concentrically around the outer surface of the column when the spool is within the bucket and when the spool is removed from the bucket and wherein the sidewall engages peripheral edges of both the round top and bottom plates of the spool to concentrically and vertically retain the spool within the bucket during rotation of the spool, wherein the second end of flexible member passes through the second access hole and wherein the first end of flexible member passes through the first access hole of the bucket; and

means for rotating the spool within the bucket to wind the flexible member around the column.

19. The device of claim 18 wherein the elongate flexible member is a cord and wherein the first and second access holes have a circumference large enough to receive the cord through the first and second access holes.

22. The device of claim 18 wherein the column further includes a cavity bounded by the outer surface extending from the outer surface to the second access hole, wherein the second end of the flexible member extends through the cavity and through the second access hole and wherein the first end of the flexible member extends therethrough the first access hole of the bucket.

24. The device of claim 18 wherein the means for rotating the spool comprises:

a bearing unit between the bottom of the spool and the base of the bucket; and

a crank secured to the top plate of the spool.

26. The device of claim 18 wherein the first access hole of the bucket comprises an elongate slot extending through and along a substantial length of the side wall of the bucket from near the bottom plate to near the top plate of the spool to permit the flexible member to be wound substantially around the entire outer surface of the column.

33. The device of claim 18 further including a foot plate secured to an exterior the base of the bucket, wherein the footplate has a substantially horizontal portion extending beyond the sidewall so as to permit force to be applied to the foot plate for stabilizing the bucket during rotation of the spool.

34. The device of claim 18 wherein the top plate comprises a generally flat disk and wherein the second access hole extends through the disk.

36. A device for storing an elongate flexible member having a length, a first end and a second end, the device comprising:

a bucket having a base, a cylindrical sidewall and a hole extending through the sidewall;

a spool disposed within the bucket, the spool comprising:

a top plate having a top surface, a bottom surface, and a hole extending through the top plate from the top surface to the bottom surface;

a bottom plate having a top surface and a bottom surface;

a tube vertically mounted between the top plate and the bottom plate independent of the base and concentric with the hole in the top plate and having one end secured to the top surface of the bottom plate and the other end secured to the bottom surface of the top plate, the tube having an outer surface for winding the length of the flexible member around and a cavity enclosed by the outer surface extending from the outer surface to the hole of the top plate;

a bearing member secured to the bottom surface of the bottom plate and freely resting upon but not attached to the base of the bucket to allow the spool to be rotated within the bucket and to allow the spool to be lifted and removed from the bucket, and

means coupled to the top plate for rotating the spool within the bucket,

wherein the sidewall engages peripheral edges of the top plate and the bottom plate of the spool to concentrically and vertically retain the spool within the bucket during rotation of the spool and wherein the first end of the flexible member passes through the hole of the bucket, the length of the flexible member winds around the outer surface of the tube and the second end of the flexible member passes through the cavity and through the hole in the top plate of the spool.

37. A device for storing an elongate flexible member having a length, a first end and second end, the device comprising:

a container having a base, a sidewall and a first access hole extending through the sidewall;

a spool disposed within the container, the spool including:

a bottom freely resting upon but not attached to the base of the container to allow the spool to be rotated within the

container and to allow the spool to be lifted and removed from the container;

a top having a second access hole extending therethrough; and

a column vertically mounted between the top and the bottom independent of the base, the column having an outer perimeter for winding the length of flexible member around, wherein the first end of the flexible member passes through the second access hole, the length of the flexible member winds around the column and the second end of the flexible member passes through the first access hole of the container;

a footplate fixedly coupled to an exterior of the base of the container, wherein the footplate includes a substantially horizontal portion which extends beyond the sidewall of the container for stabilizing the container during rotation of the spool; and

means for rotating the column within the container.

Appendix B ****

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Appendix C ****

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United States Patent [19]

Harrill

[11] **4,244,536**

[45] **Jan. 13, 1981**

[54] **EXTENSION CORD REEL**

[76] Inventor: **Thomas D. Harrill**, Box 330, Mabank, Tex. 75147

[21] Appl. No.: **89,889**

[22] Filed: **Oct. 31, 1979**

[51] **Int. Cl.**[3] **B65H 75/40**

[52] **U.S. Cl.** ..... **242/96**; 191/12.2 R

[58] **Field of Search** ..... 242/96, 85, 84.8, 107, 242/107.13, 115, 116; 191/12.2 R, 12.4

[56] **References Cited**

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Primary Examiner—Edward J. McCarthy

Attorney, Agent, or Firm—Clarence A. O'Brien; Harvey B. Jacobson

[57] **ABSTRACT**

A hollow axially short and generally cylindrical body is provided and is open at one end. The other end of the body includes a closure end wall having a central portion which is displaced longitudinally of the body approximately one-half the length thereof toward the open end of the body and a pair of front and rear generally cylindrical aligned spool core sections are disposed within the body in front to rear aligned relation. The front and rear spool core sections include rear and front radially inwardly projecting annular end walls and front and rear radially outwardly projecting circumferential flanges. A generally cylindrical hub including a radially outwardly projecting forward end flange is also provided and the annular end walls of the spool sections are journalled on the hub, the forwardly displaced portion of the rear wall of the body being centrally apertured and a threaded fastener being secured through the hub and the rear wall central portion.

8 Claims, 3 Drawing Figures

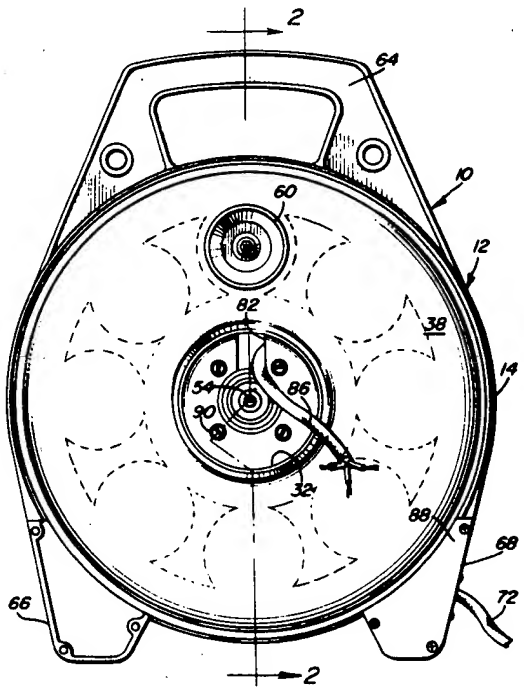

FIG. 2

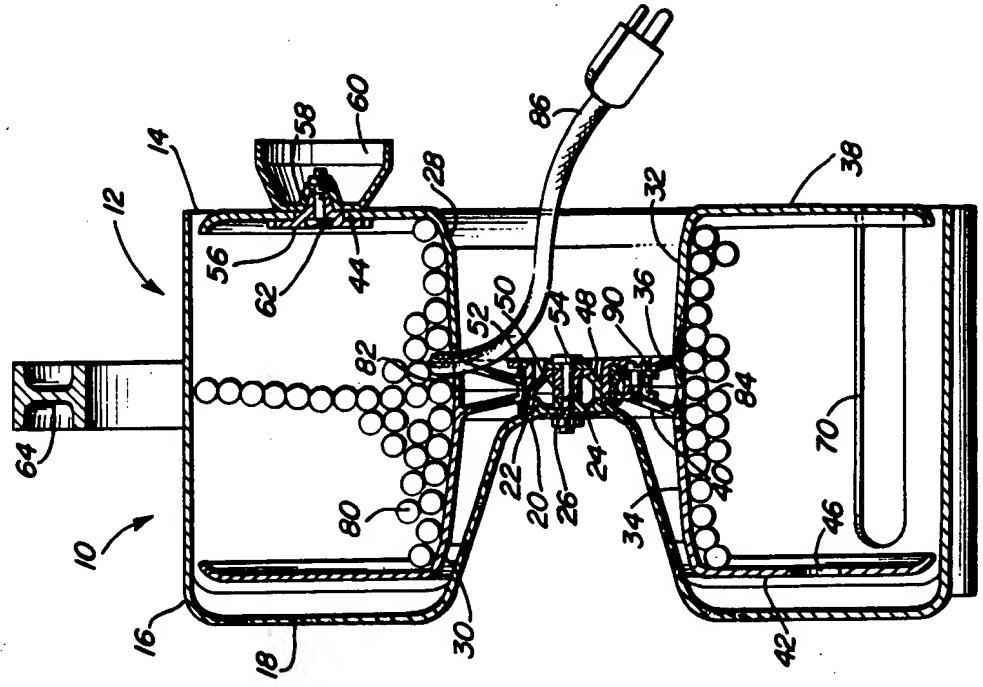
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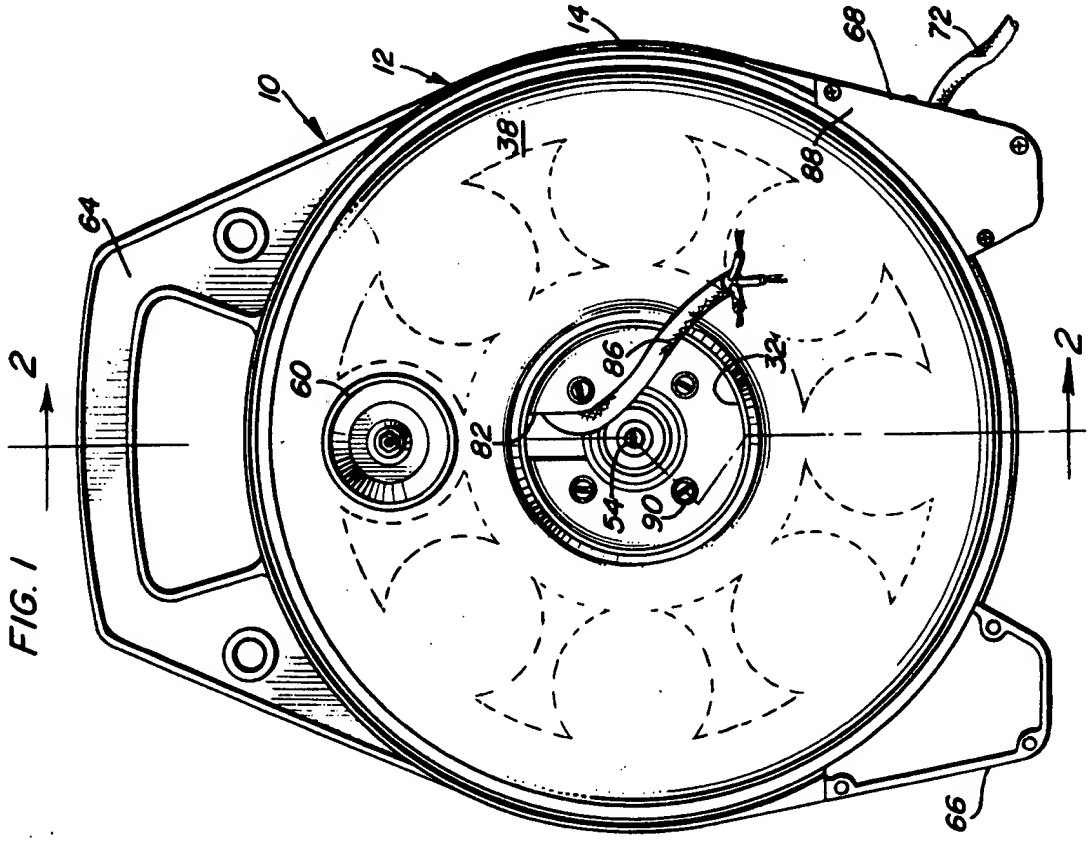
FIG. 1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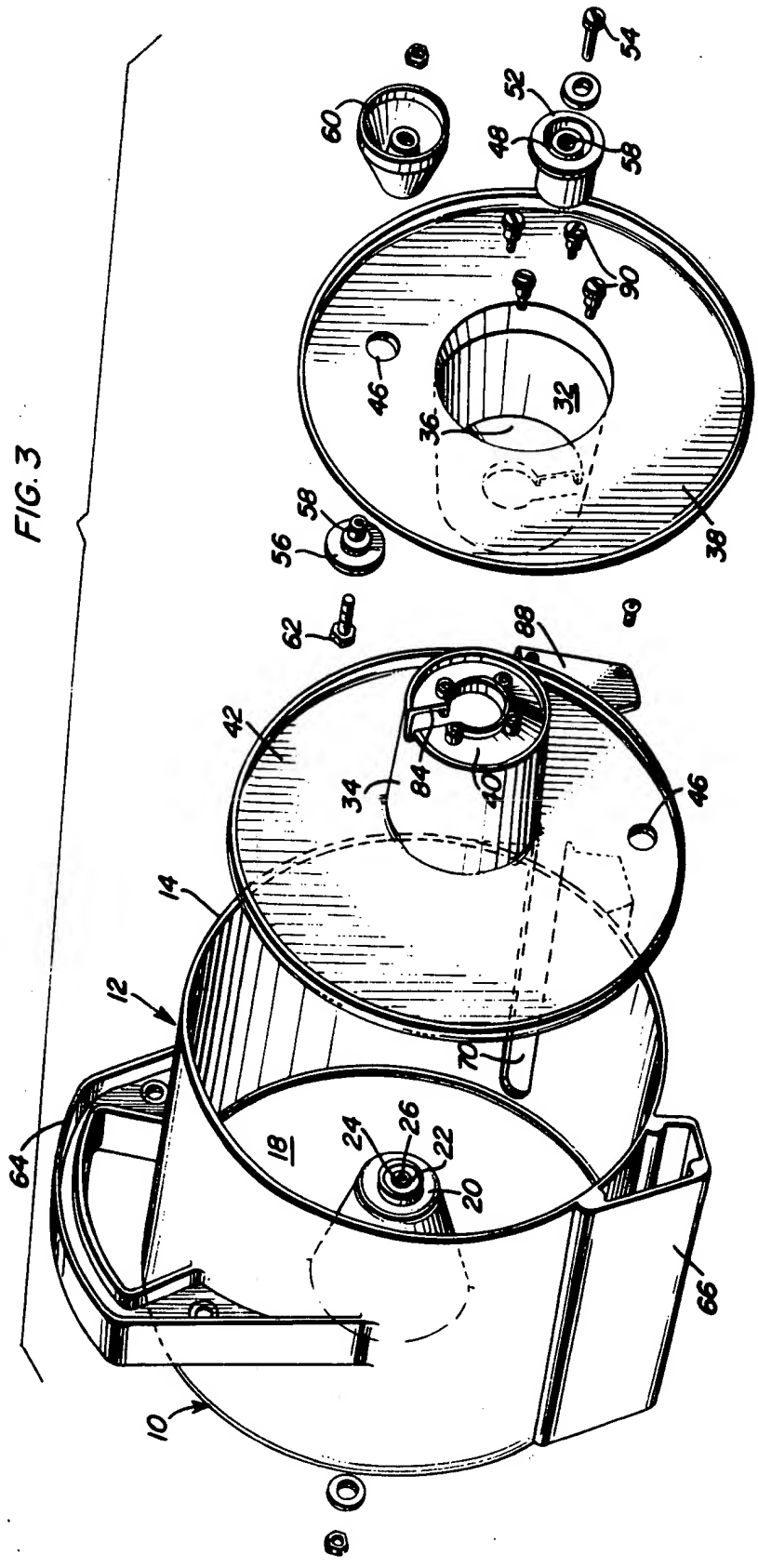
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FIG. 3

EXTENSION CORD REEL

BACKGROUND OF THE INVENTION

The reel construction of the instant invention comprises an improvement over the extension cord reel and case disposed in my prior U.S. Pat. No. 4,061,290, dated Dec. 6, 1977. The reel of the instant invention includes an improved spool construction and spool mounting structure as well as a simplified spool handle for rotating the spool relative to the housing portion.

BRIEF DESCRIPTION OF THE INVENTION

The extension cord reed of the instant invention includes a pair of identical opposite end spool sections secured together in end-to-end reverse relation through the utilization of a removable hub from which the spool sections are journalled and the hub is removably supported from a forwardly displaced central rear end wall portion of a cylindrical body whose forward end is open. By this construction, the extension cord reel may be inexpensively produced and readily assembled.

The main object of this invention is to provide an improved extention cord reel constructed in a manner whereby certain major components thereof may be duplicated and the various components of the extension cord reel may be readily assembled.

Another object of this invention is to provide an extension cord reel in which an extension cord may be conveniently housed and from which an extension cord may be readily unreeled.

Still another important object of this invention is to provide an extension cord reel including only four major components, two of which are duplicates of each other, and which may be utilized to house a considerable length of extension cord.

A final object of this invention to be specifically enumerated herein is to provide an extension cord reel construction in accordance with the preceding objects and which will conform to conventional forms of manufacture, be of simple construction and easy to use so as to provide a device that will be economically feasible, long lasting and relatively trouble free in operation.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part hereof, wherein like numerals refer to like parts throughout.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a front elevational view of the extension reel of the instant invention;

FIG. 2 is a vertical sectional view taken substantially upon the plane indicated by the sectional line 2—2 of FIG. 1; and

FIG. 3 is an exploded perspective view of the extension cord reel construction.

DETAILED DESCRIPTION OF THE INVENTION

Referring now more specifically to the drawings, the numeral **10** generally designates the extension cord reel of the instant invention. The extension cord reel **10** includes a generally cylindrical axially short hollow body or housing referred to in general by the reference numeral **12**. The housing **12** includes an open front end **14** and a rear end **16** closed by a rear wall **18** having a

forwardly displaced central portion **20** disposed approximately midway being the front and rear ends of the housing **12**.

The central portion **20** defines a forwardly facing annular seat **22** centrally thereon and the seat **22** has its inner periphery being defined by the outer surfaces of a forwardly projecting cylindrical flange **24** coaxial with the seat **22**. The central portion **20** is centrally apertured as at **26**.

The reel **10** includes a pair of identical front and rear spool sections **28** and **30** disposed in end-to-end reversed relation. The spool sections **28** and **30** include generally cylindrical body portions **32** and **34**, respectively, and the cylindrical body portion **32** includes a rear radially inwardly projecting annular end wall **36** and a forward radially outwardly projecting circumferential retaining flange **38**. The cylindrical body portion **34** includes a forward radially inwardly projecting annular end wall **40** and a rear radially outwardly projecting circumferential retaining flange **42**. The flanges **38** and **42** are identically apertured as at **44** and **46** and a cylindrical hub **48** is provided and defines a central bore **50** extending therethrough. The hub **48** includes a forward radially outwardly projecting circumferential retaining flange **52** and the annular end walls **36** and **40** are removably journalled on the hub **48** rearward of the retaining flange **52**, the bore **50** being registered with the bore or aperture **26** and a threaded fastener **54** being secured through the bore **50** and aperture **26** whereby the hub **48** is secured to the central portion **22** of the rear wall **18** with the rear end of the cylindrical hub **48** seated in the seat **22**.

A backing washer assembly **56** is provided and includes a forwardly projecting centrally apertured mounting portion **58**. The backing washer assembly **56** is abutted against the rear side of the retaining flange **38** of the spool section **28** with the mounting portion **58** projecting through the bore **54**. A handle **60** is mounted on the mounting portion **58** and retained in position thereon by means of a removable fastener **62**. The upper portion of housing **12** includes an integral handle **64** and the lower portion of the housing **12** includes depending integral leg portions **66** and **68**, a further lower portion of the housing **68** being longitudinally slotted as at **70** to receive one end **72** of an extension cord **80** therethrough. Also, the spool sections **28** and **30** are apertured as at **82** and **84** whereby the other end **86** of te extension cord **80** may extend through the aperture **82**. The slot **70** opens into a hollow portion of the leg **68** removably closed by a removable cover plate **88**. Further, the spool core sections **28** and **30** are secured together by suitable threaded fasteners **90**.

Inasmuch as the spool core sections **28** and **30** are identically formed, the reel **10** includes only three differently constructed major components. The housing **12** comprises one of the major components, the hub **48** comprises a second of the major components and each of the spool sections **28** and **30** comprises a third major component. It is deemed readily apparent that the reel may thus be economically produced and it it will further be realized from the foregoing description that the reel may have its components readily assembled. Of course, it is proposed that the various major components of the reel will be molded of a suitable plastic material.

The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous

modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly, all suitable modifications and equivalents may be resorted to, falling within the scope of the invention.

What is claimed as new is as follows:

1. An extension cord reel construction including a hollow body having opposite front and rear ends, a rear closure wall closing the rear end of said body and including a central portion projecting forwardly toward the forward end of said body and terminating forwardly generally centrally intermediate the front and rear ends of the body, a pair of front and rear generally cylindrical and front-to-rear aligned spool core sections, said rear spool core section including a rear radially outwardly projecting circumferential flange and a front inwardly projecting annular wall, said front spool section including a front radially outwardly projecting circumferential flange and a rear inwardly projecting annular wall, said spool sections being end abutted and secured together with the front and rear facing surfaces of said front and rear annular walls being disposed in abutting relation, a generally cylindrical front-to-rear extending hub including a generally cylindrical outer rim portion and an annular central hub portion, said outer rim portion including a front radially outwardly projecting flange, said front and rear annular walls being journalled on said outer rim portion rearwardly of said front radially outwardly projecting flange of said hub, said central portion of said rear closure wall having a central bore formed therethrough and defining a forwardly facing annular seat surface concentric with and about said central bore, the rear end of said outer rim being seated against said seat surface, and a fastener secured through said central bore and said annular central hub portion, said front and rear spool sections being at least substantially enclosed within said hollow body with the rear spool core section loosely telescoped over said central portion of said rear wall and said front circumferential flange subsequently completely closing the front end of said body.

2. The combination of claim 1 wherein said fastener comprises an elongated longitudinally tensionable fastener including opposite end thrust member defining portions thereon opposing the front end of said annular central hub portion and the rear side of said central portion of said rear wall.

3. The combination of claim 1 wherein said front and rear spool sections are identically formed.

4. The combination of claim 1 wherein said front radially outwardly projecting circumferential flange of said front spool section includes an opening formed therethrough, a backing washer assembly abutted against the rear side of the last mentioned flange and including a mounting portion projecting forwardly through said opening, and a handle mounted on said forwardly projecting mounting portion and secured thereon by a fastener removably secured through said handle and said forwardly projecting mounting portion.

5. The combination of claim 1 wherein one of said inwardly projecting annular walls and an adjacent portion of the corresponding cylindrical spool core section include openings formed therethrough to receive one end of an extension cord through the last mentioned openings.

6. The combination of claim 5 wherein said body includes a side wall portion having a slot formed therein for receiving one end thereof an extension cord therethrough.

7. The combination of claim 6 wherein said front radially outwardly projecting circumferential flange of said front spool section includes an opening formed therethrough, a backing washer assembly abutted against the rear side of the last mentioned flange and including a mounting portion projecting forwardly through said opening, and a handle mounted on said forwardly projecting mounting portion and secured thereon by a fastener removably secured through said handle and said forwardly projecting mounting portion.

8. The combination of claim 7 wherein said front and rear spool sections are identically formed.

* * * * *

United States Patent [19]

Schwartz

[11] Patent Number: 4,520,239

[45] Date of Patent: May 28, 1985

[54] **ELECTRICAL CORD REEL AND STORAGE SYSTEM**

[75] Inventor: **Frederic W. Schwartz**, Providence, R.I.

[73] Assignee: **Cable Electric Products, Inc.**, Providence, R.I.

[21] Appl. No.: **430,893**

[22] Filed: **Sep. 30, 1982**

[51] **Int. Cl.**[3] **H02G 11/02; B65H 75/40**

[52] **U.S. Cl.** ..... **191/12.4**; 242/96; 339/113 L; 339/147 C

[58] **Field of Search** ..... 191/12.2 R, 12.4; 242/96, 115; 339/5 RL, 6 RL, 8 RL, 113 L, 119 C, 147 C, 157 C

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Primary Examiner—Robert B. Reeves
Assistant Examiner—David F. Hubbuch
Attorney, Agent, or Firm—Paul J. Sutton

[57] **ABSTRACT**

The present invention features a device for storing an electrical extension cord. Generally users of an extension cord have a problem with storing the cord before and after use. The present invention provides a device for conveniently and simply extending precisely the amount or extension cord required and also enables the compact storage of the extension cord. The compact storage device is provided with a handle for convenient portability. The storage device is further provided with a direct connection to a multiple receptacle. The direct connection eliminates the problem of movable connections found on other storage devices. The device of the present invention also is provided with an indicator light which lights when the extension cord has been plugged into a source of electric power.

10 Claims, 19 Drawing Figures

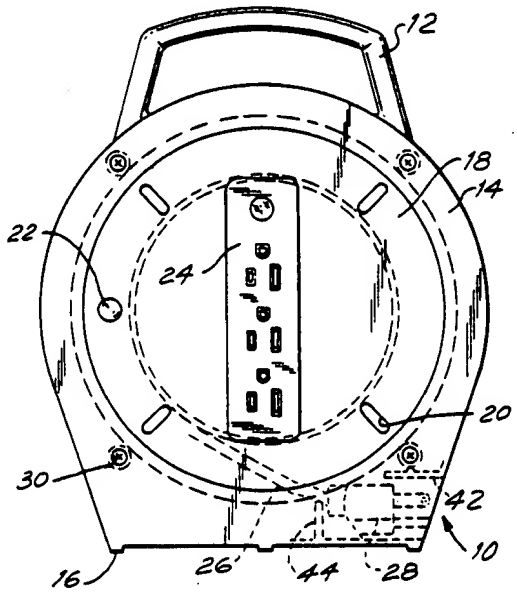


FIG.1

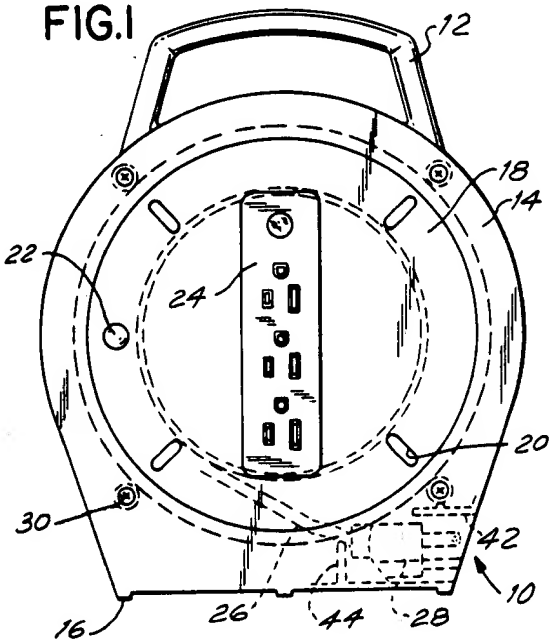


FIG.2

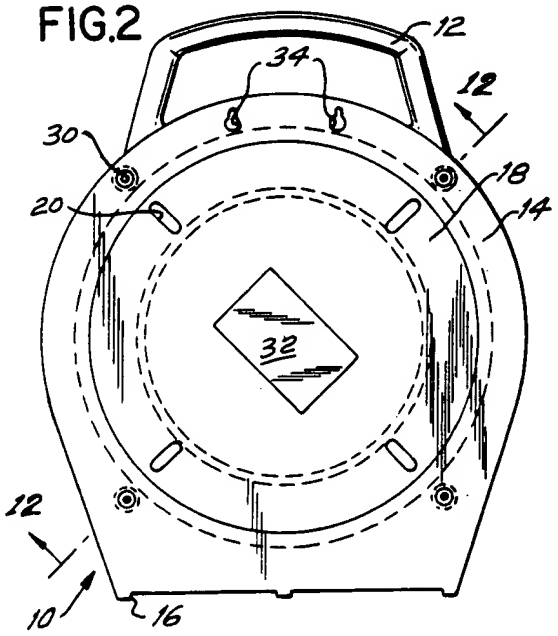


FIG.3

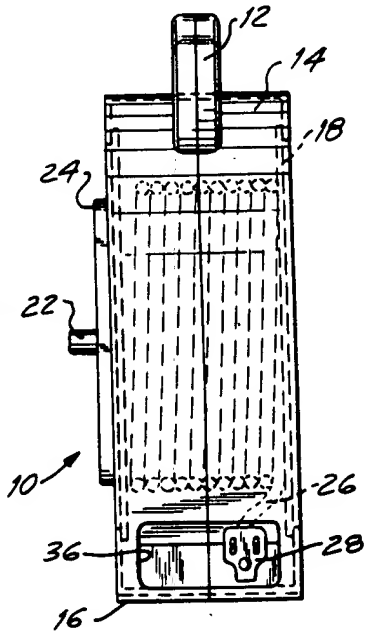
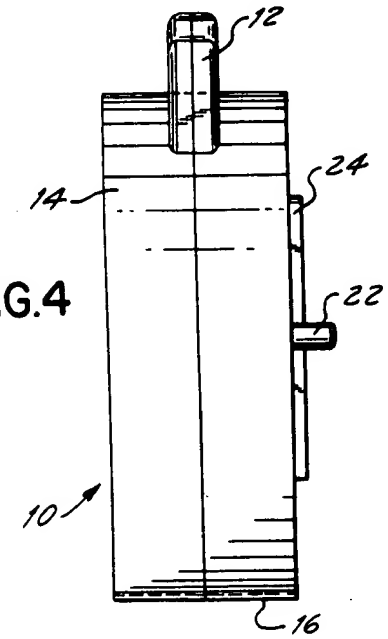


FIG.4



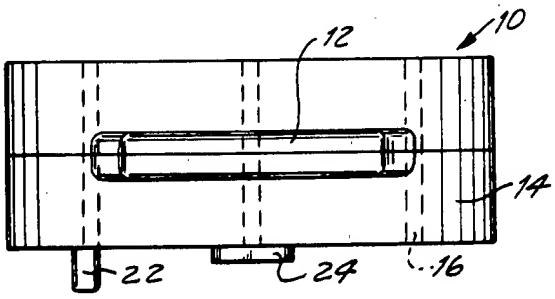
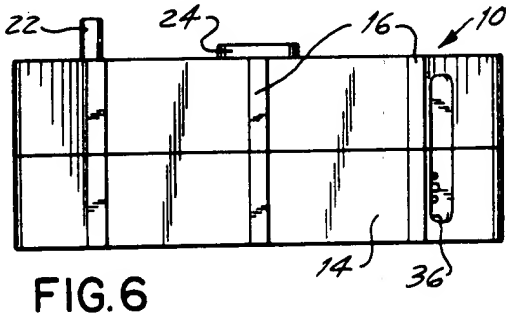


FIG.5



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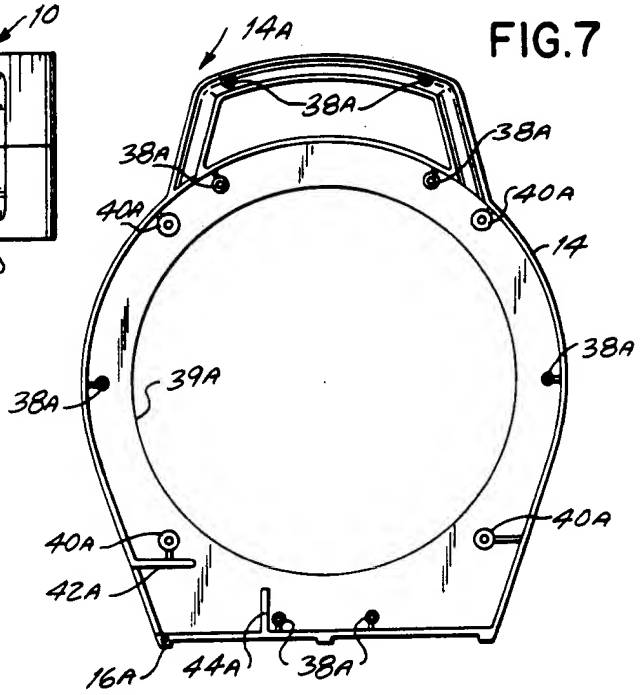


FIG.7

FIG.8

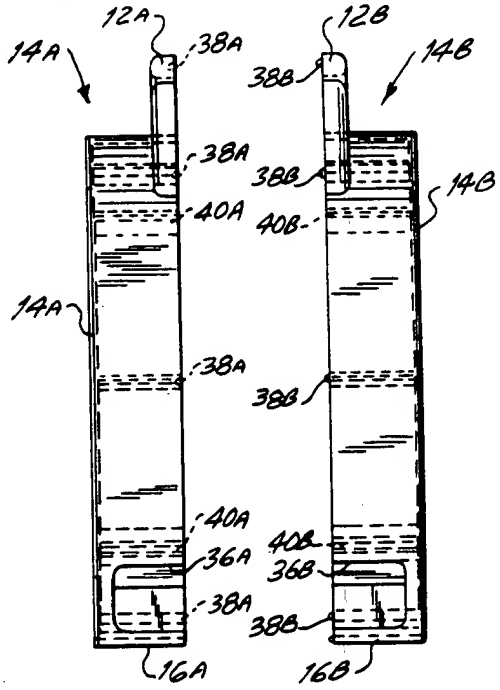


FIG.9

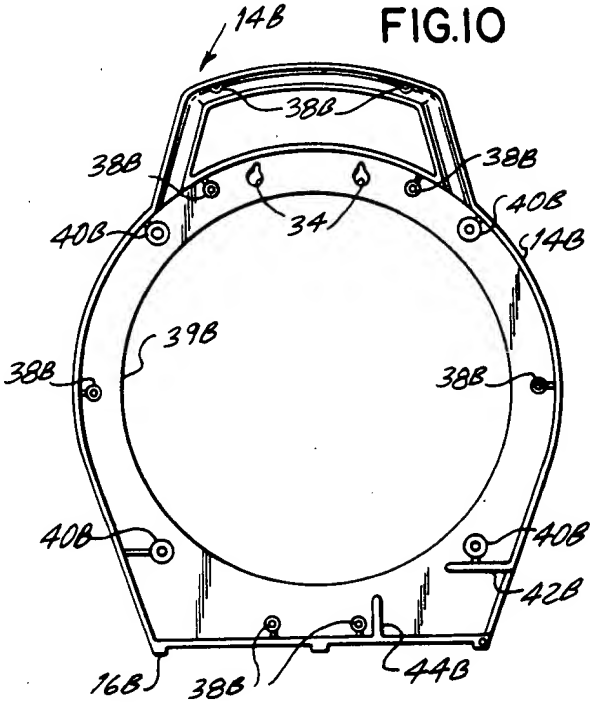
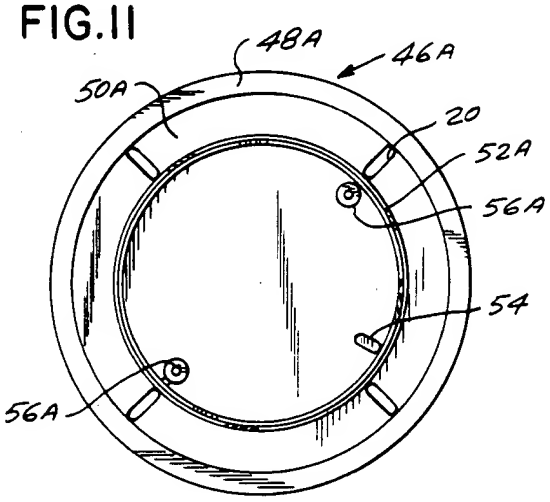


FIG.10

FIG.11



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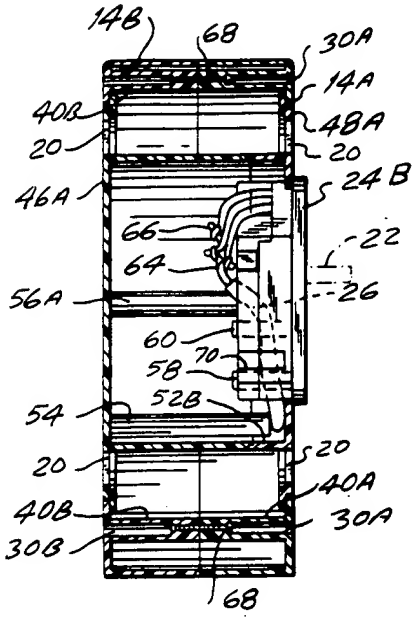

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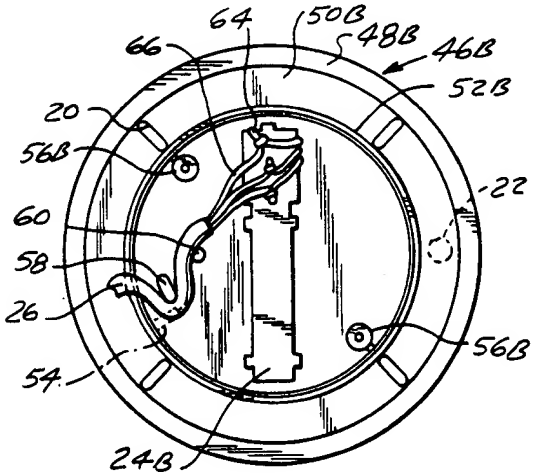
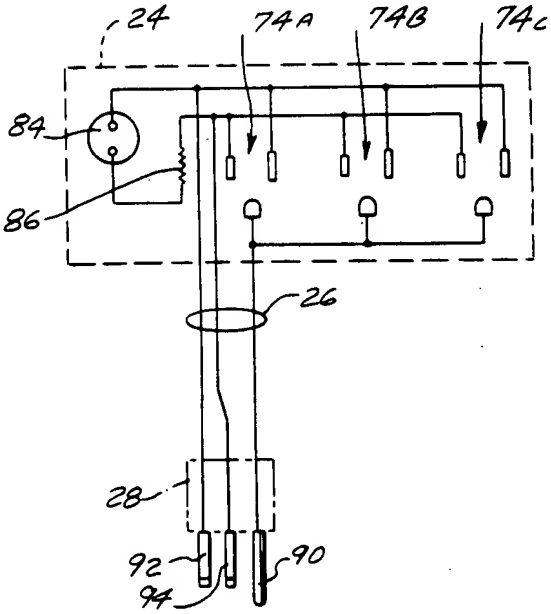


FIG.19



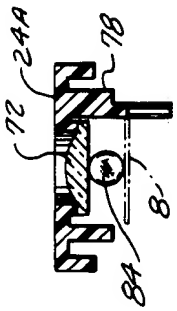


FIG.17

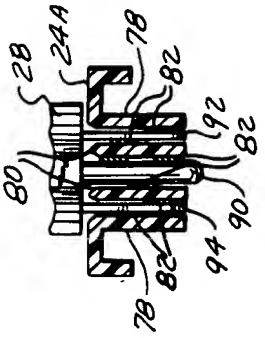


FIG.18

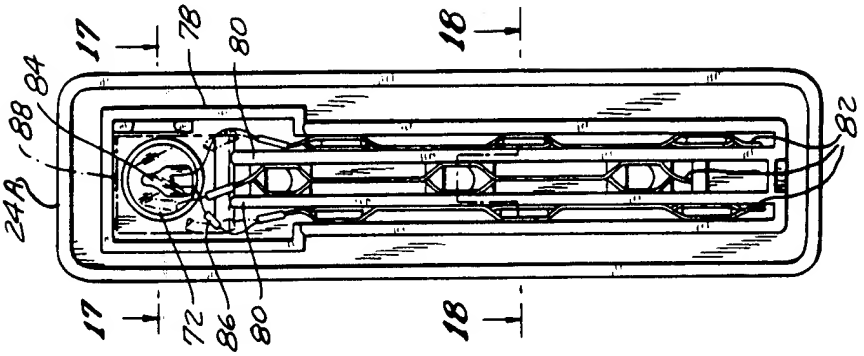


FIG.16

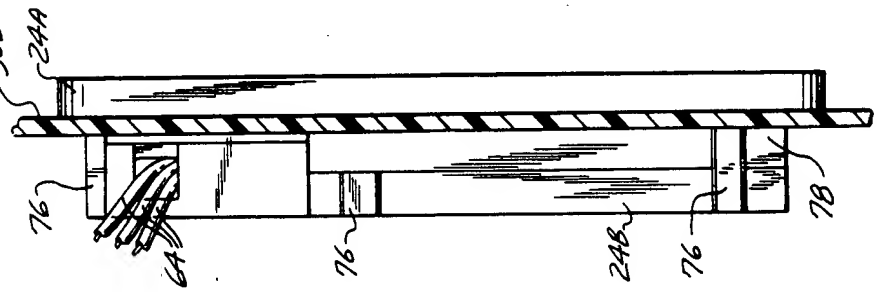


FIG.15

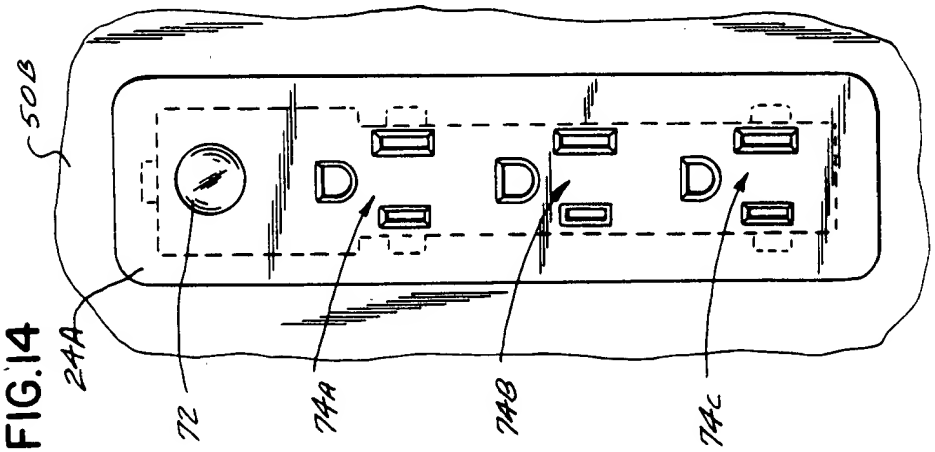


FIG.14

ELECTRICAL CORD REEL AND STORAGE SYSTEM

BACKGROUND OF THE INVENTION

1. Field of the Invention

This invention relates to storage devices for cords in general and specifically relates to a storage device for an electric cord.

2. Prior Art

Since the advent of electric power extension cords have been in constant use, for an equally long time the storage of these cords have been a problem. The most common method of storage is to wind the cord around the users hand and elbow resulting in a coil having the approximate diameter of the users lower arm. Such coils are still quite common and consist of multiple coils placed adjacent to one another. Since there is no means for the individual coils to retain their position relative to the other coils much tangling of the individual coils will take place. The resulting tangling would prevent the subsequent uncoiling of the electric cord without having to untangle the cord. Electric cords coiled on an arm cause a great deal of wasted time when they have to be untangled.

The next obvious step is to wind the cord on a form such as a drum or flat board. Here, the cord is supported by the form and the individual turns are substantially fixed in place. Winding the cord on a form may not be as convenient as winding it on one's arm but the fact that the cord will unwind without tangling outweighs the stated inconvenience.

Subsequently cord storage devices were designed and built containing a structure to support a drum upon which the electric cord could be wound and unwound. The drum was provided with a handle to rotate the drum. The support structure was provided with a receptacle for use with an appliance such as a portable electric drill. The support structure is stationary and the drum rotatable means must be provided for winding the electrical cord that conducts the electric current. In order to allow continuous rotation of the drum, slip rings are used for the electrical path. Slip rings are troublesome since electric conduction depends upon the cleanliness of a moving contact, namely, slip rings contacted by brushes. In order to construct a reliable storage device of the foregoing description much care in the manufacture must be used. The required care results in an expensive storage device affordable only by industrial users.

The present invention eliminates the need for slip rings and constructs the storage device of a moldable plastic material which results in a device affordable by craftsmen who may simply be interested in a relatively inexpensive electric cord storage device. The present invention therefore places the technology of these storage devices within the reach of a greater number of users.

SUMMARY OF THE INVENTION

An object of the present invention is to provide for a reliable and inexpensive storage device for an electric cord.

Another object of the present invention is to provide for a storage device having a multiplicity of receptacles.

Still another object of the present invention is to eliminate movable connections between the receptacles and the electric cord.

Yet another object of the present invention is to provide a means for indicating the presence of electric power at the receptacle.

A further object of this invention is to provide for an easily portable storage device.

A still further object of the present invention is to provide for a plastic storage device having minimum weight.

Other and further objects of the invention will be apparent from the following drawings and description of a preferred embodiment of the invention in which like reference numerals are used to designated like parts in various views.

DESCRIPTION OF THE DRAWINGS

FIG. **1** is a front view of storage device of the present invention;

FIG. **2** is a rear view of storage device of the present invention;

FIG. **3** is an opening side view of the storage device;

FIG. **4** is another side view of the storage device;

FIG. **5** is a top view of the storage device;

FIG. **6** is a bottom view of the storage device;

FIG. **7** "A" portion of storage device enclosure internal view;

FIG. **8** is a side view of "A" portion;

FIG. **9** is a side view of "B" portion;

FIG. **10** "B" portion of storage device enclosure internal view;

FIG. **11** is a internal view of "A" reel flange;

FIG. **12** is a view along **12—12** of FIG. **2**;

FIG. **13** is an internal view of "B" reel flange;

FIG. **14** is a top view of mounted receptacle;

FIG. **15** is a side view of mounted receptacle;

FIG. **16** is an internal view of top portion of receptacle;

FIG. **17** is a view along **17—17** of FIG. **16**;

FIG. **18** is a view along **18—18** of FIG. **16**; and

FIG. **19** is a schematic diagram illustrating the electrical connections within the device.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Reference to FIG. **1** shows a storage device **10** of the present invention. Seen here is a carrying handle **12** integrally attached to an enclosure **14**. Having a reel **18** movably captured within the mid-body of the enclosure **14**. The enclosure **14** is provided with a set of three pads **16** for protecting the enclosure **14** from wear as the storage device **10** is placed on a supporting surface such as the floor. The reel **18** is shown to be provided with a winding handle **22** for use in moving the reel **18**. The enclosure **14** is comprised of two portions (to be described later) fastened together by means of fasteners placed within a set of enclosure fastener openings **30**. The reel **18** is seen to have a set of viewing slots **20** which allow the user to see into the interior of the storage device **10** in order to observe an electric cord **26** which has been wound on the reel **18**. The electric cord **26** enters the enclosure **14** by means of a cord access opening **36** (best seen in FIG. **3**). The cord **26** is provided with a plug **28** for connection with the electric receptacle providing power to a receptacle **24** affixed to the reel **18**. The plug **28** is housed within the enclosure

14 in the compartment formed by a vertical wall 44 and a horizontal wall 42 thereby protecting it.

FIG. 2 shows the rear view of the storage device 10. Shown in this view is the handle 12 on the top and the set of three pads 16 which are affixed to the enclosure 14. Also seen are the set of enclosure fastener openings 30 which cooperate with similar openings on the front view shown in FIG. 1. This rear view of FIG. 2 shows the reel 18 having a set of viewing slots 20 on this side too. The reel 18 also has affixed in a central location a label 32 giving the user instructions for use of the storage device 10. The rear view also shows a pair of storage openings 34 located at the top of the enclosure 14. The storage openings 34 allow the storage device 10 to be hung on a wall supported by nails or the like. The line 12—12 represents a section taken along that line which will be FIG. 12 (later described).

In FIG. 3 is seen the side view of the storage device 10 showing the relative positions of the carrying handle 12, the enclosure 14, one of the set of pads 16 and the reel 18. Shown also is the receptacle 24 and the winding knob 22. The side view of FIG. 3 also shows the cord access opening 36 and the plug 28 housed within the opening. Shown as a hidden item is the electric cord 26 stored on the reel 18.

Reference to FIG. 4 shows the other side of the storage device 10. Here shown are the carrying handle 12, the enclosure 14 and one of the set of pads 16. The receptacle 24 and the winding handle is shown on the front of the storage device 10.

FIG. 5 shows the top view of the storage device 10 with the carrying handle 12 affixed to the enclosure 14 and the winding handle 22 and receptacle 24 visible. The set of pads 16 are seen as dotted lines being hidden by the enclosure 14.

In FIG. 6 is shown the bottom view of the storage device 10. Seen here are the set of three pads 16, the receptacle 24 and the winding handle 24.

FIG. 7 illustrates an "A" portion 14A of the enclosure 14. Description of the "A" portion 14A is a plastic molding and as such has several locating posts 38A provided with holes for receiving dowels which are located on cooperating locating posts. The "A" portion 14A is seen to have molded as an integral part a set of four enclosure spacer posts 40A. Each of the spacer posts 40A have the enclosure fastener opening 30. The "A" portion 14A is also seen to have a reel flange opening 39A, a cord access opening portion 36A, a horizontal wall portion 42A and a vertical wall portion 44A.

FIG. 9 is the side view of the "B" portion 14B of the enclosure 14. When FIG. 9 is taken together with FIG. 10 which is an internal view of the "B" portion 14B, a further understanding of the present invention will result. FIGS. 8 and 9 are arranged so that the two portions "A" and "B" are facing each other as they would when being assembled to form the enclosure 14. It can now be seen that the locating posts 38A and 38B will abut each other. In order to provide rigidity to the enclosure 14 where the "A" portion 14A and the "B" portion 14B adjoin the abutting locating posts 38A and 38B are provided with a dowel which is received by a cooperative hole.

FIG. 12 is the sectional view along line 12—12 of FIG. 2 viewed in the direction of the arrows. FIG. 12 taken together with FIG. 11 and FIG. 13 describe the construction of the reel 18. The section shown in FIG. 12 clearly shows the "A" portion 14A and the "B" portion 14B joined together to form the enclosure 14. The enclosure spacer posts 40A and 40B are here shown abutting and the spacer posts are fastened together by a set of enclosure fasteners 68 which are self tapping screws. The spacer posts 40A and 40B serve to hold the "A" portion 14A and the "B" portion 14B the required distance apart to permit the reel 18 to move freely. Further, the enclosure spacer posts 40A and 40B serve as bearing points for a rear reel flange 46A and a front reel flange 46B. The periphery of a stepped outer portion 48A and 48B of the respective reel flanges 46A and 46B use the spacer posts 40A and 40B as bearing points. The outer periphery herein before referred to, therefore, does not bear on the reel flange openings 39A and 39B. It can be seen that the reel flanges are better seen in FIG. 13.

FIG. 14 is a top view of the receptacle 24 where a receptacle top portion 24A is shown affixed to a section of the outside surface of the inner flange portion 50B. The receptacle top portion 24A is seen to have a set of plug element openings 74A, 74B and 74C as well as a pilot light lens 72. FIG. 15 is a sectional side view of FIG. 14 showing the receptacle top portion 24A and the bottom portion 24B with the inner flange portion 50B sandwiched between. The receptacle top portion 24A is retained against the flange portion 50B by a set of receptacle retaining posts 76 molded integrally with the receptacle bottom portion 24B. The set of receptacle wires 64 is seen extending from an opening in the side of bottom portion 24B. Shown in FIG. 16 is the interior of the receptacle top portion 24A. Seen here is an outer wall 78 which forms the outside of top portion 24A within which is found a set of inner walls 80 which together with the outer wall 78 form the series of slots serving to retain a set of contact strips 82. Toward the left of FIG. 16 is seen a neon lamp 84 and a resistor 86 for use with the neon lamp 84. Below the neon lamp 84 is the pilot light lens 72. Shown as a dotted rectangle is an insulator 88. FIG. 17 which is a section taken along the line 17—17 of FIG. 16, clearly shows the relative positions of the lens 72, the neon lamp 84 and the insulator 88. The lens 72 disperses the light from the neon lamp 84 so as to fill the entire lens 72.

FIG. 18 shows a section taken along line 18—18 of FIG. 16. FIG. 18 shows the mechanism whereby contact is maintained between the rear reel flange 46A and the front reel flange 46B, each having in common the viewing slots 20 and a set of drum fastener posts 56A and 56B. The aforesaid drum fasteners posts 56A and 56B serve to fasten the reel flanges 46A and 46B together in the some fashion as the spacer posts 40A and 40B.

The rear reel flange 46A is provided with a drum body portion 52A, the extent of which can be seen in FIG. 12. The interior of the drum body portion 52A has affixed to it a cord retainer 54. The front reel flange 46B, shown in FIG. 13, is seen to have the winding handle 22 and a centrally located receptacles rear portion 24B fastened thereto. The receptacles rear portion 24B is seen to have protruding therefrom a set of receptacle wires 64 leading to a set of connectors 66. Turning our attention to the electric cord 26 we observe that it enters the interior of a drum body portion 52B affixed to the front reel flange opening 70 best seen in FIG. 12. The electric cord 26 then makes a bight about an anchor post 58 and runs between the anchor post 58 and a retaining post 60. Beyond the retaining post 60 the electric cord 26 is opened to expose a set of cord wires 62 which enter the set of connectors 66. The extent of the

drum body portion 52B is best seen in FIG. 12. Close attention to the area in FIG. 13 where the electric cord 26 is shown will reveal the sectioning of a portion of the drum body portion 52B to show the anchor post 58 and more importantly the position of the cord retainer 54 and how it holds the electric cord 26 against the inside surface of inner flange portion 50B. The location of the cord retainer 54 is shown in solid lines in FIG. 12, dotted lines in FIG. 13. The elements seen extending from the plug 28 are a grounding pin 90, a wide blade 92 and a narrow blade 94. Reference to FIG. 18 and FIG. 16 shows that the contact strips 82 are separated into three portions which surround the elements of plug 28 in order to make electrical contact. The slots formed by the outer wall 78 and the set of inner walls 90 cause the portions of the contact strips 82 to provide contact pressure when the aforestated elements of the plug 28 are inserted into the receptacle 24.

FIG. 19 is a schematic diagram illustrating the electrical connections within the storage device 10. Within the upper rectangle of dashed lines are the electrical connections housed within the receptacle 24. The electric cord 26 is shown running between the receptacle 24 and the plug 28. FIG. 14 shows that each set of plug element openings 74A, 74B and 74C consists of a wide rectangular slot, a narrow rectangular slot and a "D" shaped opening for grounding purposes. These openings are in turn connected to the elements of the plug 28 which correspond to the shade of the elements fitting the openings. The "D" shaped opening is an electrical ground and the other two slots are connected to the source of electrical current. Therefore the neon lamp 84 and the resistor 86 are connected to the source of current.

OPERATION OF THE PREFERRED EMBODIMENT

Before use the storage device 10 is in the condition shown in FIG. 3. The electric cord 26 has been fully retracted within the enclosure 14 by operating the winding handle 22 so as to wind the cord 26 onto the reel 18. When the electric cord 26 is fully wound onto the reel 18 the plug 28 has entered the cord access opening 36. When the electric cord 26 is fully retracted the storage device 10 presents a clean smooth enclosure which will not catch upon or entangle other cords or enclosures. Nor will the storage device 10 present any sharp edges with which the user can injure himself or others. The use of a light plastic for the enclosure 14 and the reel 18 results in the storage device 10 weighing less than the electric cord 26 which it houses. Although the present invention stores 25 feet of electric cord 26 it is not limited to that quantity. The presence of the storage openings 34 allows the storage device to be hung on a wall thereby removing it from the floor. The use of an impact resistant plastic such as ABS for molding purposes results in a durable storage device 10 that will not be damaged by unintentional blows. Other plastics may be used if other qualities are considered of greater importance. In use the storage device 10 is placed in the work area and the plug 28 is grasped with the fingers and pulled out causing the cord 26 to follow. When sufficient cord 26 has been removed to reach a source of current, the plug 26 is inserted in this source of current. As soon as the receptacle 24 is energized the pilot light lens 72 will fill with light from the neon lamp 84. This provides a convenient indication that the receptacle 24 is energized and that the tools plugged into the receptacle 24 should operate, if not defective. The pilot light lens 72 will also provide a convenient means for checking the operation of the power source. If the power source is faulty it will be shown on the pilot light lens 72. The viewing slots 20 found on both sides of the reel 18 enable the user to check on the amount of electric cord 26 remaining on the drum body 52 portion of the reel 18.

The direct connection of the electric cord 26 to the receptacle 24 results in a less expensive and more reliable storage device 10.

It is to be appreciated that modifications and variations may be made to the preferred embodiment of the invention described herein without departing from the spirit and scope of the invention which is defined in the following claims.

What is claimed is:

1. A storage device for an electric cord, comprising:
   - two mating sections defining a housing, said housing having means defining a central opening;
   - an electric cord having a plug;
   - a reel for supporting and storing said electric cord, said reel being rotatable within said housing, said electric cord being wound upon said reel when said reel is caused to rotate;
   - a receptacle affixed to said reel having a plurality of electric plug element openings;
   - means for indicating the presence of an electric potential at said receptacle, when said plug is inserted into an electrical source;
   - a pair of reel flanges disposed upon said reel for supporting said electric cord; and
   - a plurality of spacer posts having the dual purpose of providing a given spacing between each section of said housing, and being in contact support of said reel flanges to provide extra support for winding said electric cord upon said reel.

2. Said device of claim 1 wherein said housing is provided with a cord access opening for allowing said electric cord access to the interior of said device.

3. Said device of claim 2 wherein said housing is provided with a carrying handle.

4. Said device of claim 3 wherein said pair of flanges is provided with a winding handle.

5. Said device of claim 4 wherein said pair of flanges is provided with a plurality of viewing slots.

6. The device of claim 5 wherein said housing is comprised of two portions connected together by a plurality of fasteners.

7. The device of claim 6 wherein said reel is comprised of two portions connected together by a plurality of fasteners.

8. The device of claim 7 wherein said means for indicating is comprised of a neon lamp.

9. The device of claim 8 wherein said receptacle is provided with a light diffusing lens for making said neon lamp more visible.

10. The device of claim 9 wherein said plug element openings each have an opening for grounding purposes and said plug has a grounding pin.

* * * * *

United States Patent [19]

Chong

[11] **4,015,795**

[45] **Apr. 5, 1977**

[54] **CABLE DISPENSER**

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[52] U.S. Cl. ..... **242/85**; 242/54 R; 242/105; 242/129

[51] Int. Cl.[2] **B65H 49/00**; B65H 75/30

[58] Field of Search ..... 242/85, 105, 103, 128, 242/129, 86, 78.6, 141, 146, 55.54, 55.42, 55, 106, 54 R; 191/12.2 R, 12.4

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Primary Examiner—George F. Mautz
Attorney, Agent, or Firm—Strauch, Nolan, Neale, Nies & Kurz

[57] **ABSTRACT**

A cable dispenser including a fixed stand with a rotatable cable turntable mounted concentrically within a rotatable pan which has a payout slot formed therethrough. Cable may be pulled from the dispenser at any angle and the structure provides an inherent braking action when pulling on the cable ceases.

9 Claims, 2 Drawing Figures

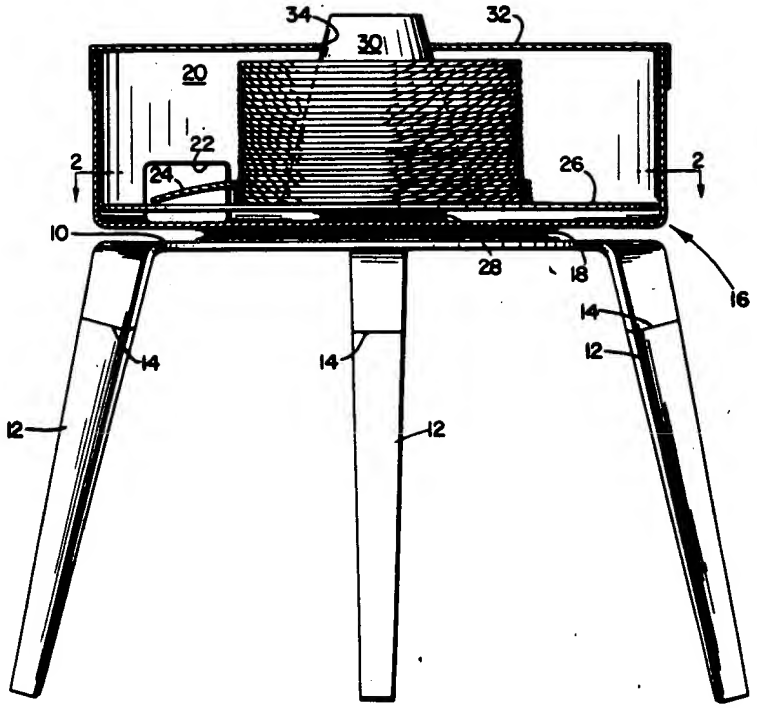


FIG. 1

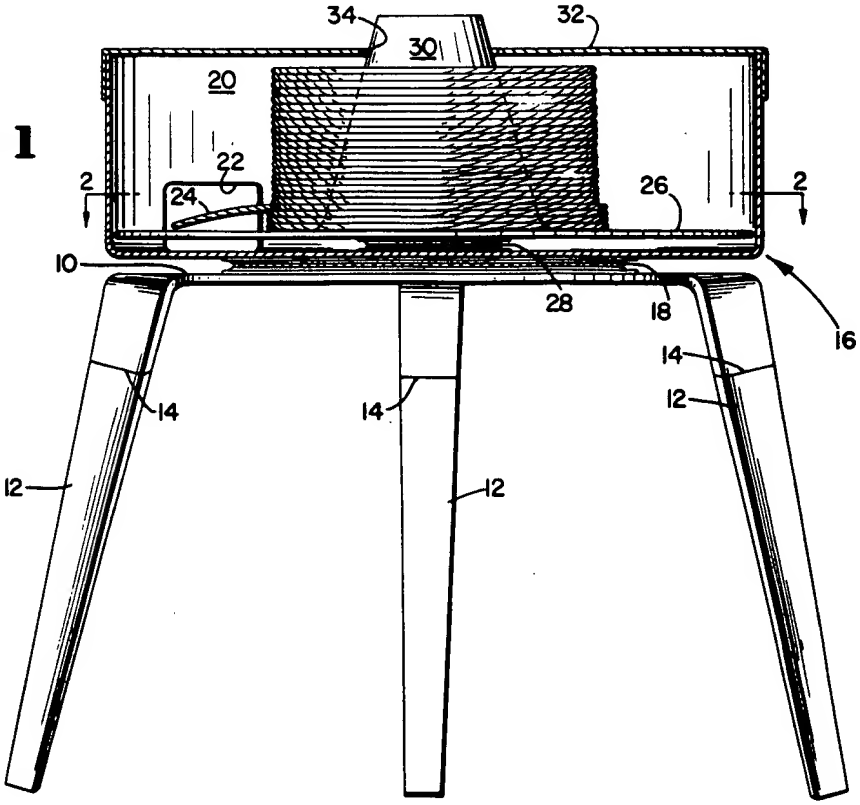
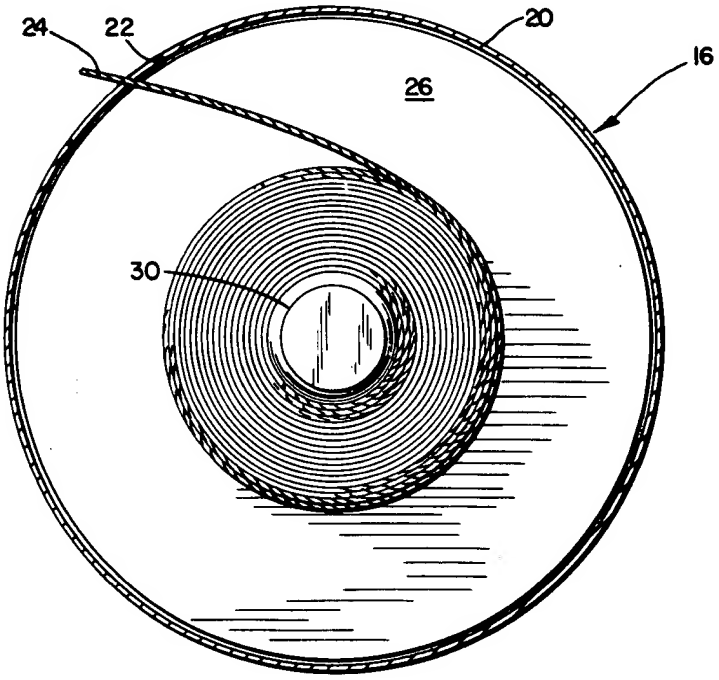


FIG. 2



CABLE DISPENSER

BACKGROUND OF THE INVENTION

The prior art is replete with examples of a fixed stand having a rotatable turntable thereon supported by a ball hearing assembly, such as the show stand disclosed in U.S. Pat. No. 485,109 and the shelf attachment in U.S. Pat. No. 719,625 and the ball bearing stands disclosed in U.S. Pat. Nos. 1,102,128 and 2,491,585. In U.S. Pat. No. 764,389, a shelf having a rotatable but open reel hereon for paying out rope, cord, etc. is disclosed.

However, the prior art does not disclose an enclosed cable dispenser or caddy for paying out cable such as plastic coated cable employed in household wiring, the dispenser being constructed so as to pay out cable in any direction and automatically stops paying out cable merely by terminating a pull on the cable, the cable dispenser requiring no braking means per se as a part of its structure.

SUMMARY OF THE INVENTION

Therefore, it is a principal object of the invention to provide a cable dispenser or payout device having a rotatable pan having a cable dispensing slot and enclosing an independently rotatable turntable for a cable supply whereby cable may be paid out in any direction and the dispenser is self braking to stop payout of cable even though no braking means per se are provided in the structure.

It is another object of the invention to provide a cable dispenser having a rotatable pan enclosure with a rotatable cable turntable therein, cable being paid out tangentially from the dispenser through an opening in a wall of the pan whereby the entire dispenser may be rotated about a vertical axis on its base to any direction for conveniently paying out cable.

It is a further object of the invention to provide a cable dispenser having a cable supply turntable rotatably mounted within a pan enclosure having a detachable cover thereon for convenient replenishing of the supply of cable in the dispenser and for preventing overlapping uncoiling of cable from the dispenser with possible subsequent jamming of cable in the dispenser.

It is yet another object of the invention to provide a cable dispenser having detachable support legs so that the dispenser may be taken through narrow openings to relatively inaccessable locations.

Further novel features and other objects of this invention will become apparent from the following detailed description, discussion and the appended claims taken in conjunction with the accompanying drawings.

BRIEF DESCRIPTION OF DRAWINGS

A preferred structural embodiment of this invention is disclosed in the accompanying drawings in which:

FIG. 1 is an elevation view of the invention, partly in section to show interior details; and

FIG. 2 is a sectional view taken along lines 2—2 of FIG. 1.

DESCRIPTION OF THE PREFERRED EMBODIMENT

The cable dispenser of this invention includes a fixed base in the form of a generally circular table **10** having but three legs **12** dependent therefrom so that table **10** may be firmly situated on any even or uneven support surface therebeneath (not shown). Legs **12** are each detachable from table **10** at **14** so that the cable dispenser may be taken through narrow openings to relatively inaccessable locations to pay out cable.

A container or generally cylindrical, upwardly open pan **16** is rotatably mounted on table **10** by means of a first ball bearing assembly **18.** Pan **16** includes a surrounding upstanding cylindrical wall **20** having dispensing opening **22** formed therethrough for tangentially paying out cable **24** from a supply of cable coiled upon a turntable **26** which is rotatably mounted on pan **16** by a second, smaller diameter ball bearing assembly **28.** Formed integrally with turntable **26** is a cable centering cone **30** which extends vertically upwardly beyond a horizontal plane defined by the upper circumferential edge of pan wall **20.** A circular cover or lid **32** has friction fit onto pan wall **20** and includes a central opening **34** through which the upper terminal end of cone **30** passes for the reasons set forth below.

Since pan **16** is freely rotatably mounted on table **10,** it may be rotated to any attitude, through **360°** in a horizontal plane, for paying out of cable in any direction desired by the user. Also, tension on cable **24** caused by pulling the cable through dispensing opening **22** automatically turns pan **16** to a position wherein opening **22** is aligned with the direction of pull upon cable **24.** Additionally, pan **16** is stabilized in that attitude, once reached, by the pull being exerted on cable **24.** In this manner, pan **16** is quickly rotated to a payout disposition by the user with no more attention being paid to the cable dispenser other than a simple tug on cable **24.**

Of course turntable **26** is rotatably mounted on and within pan **16** so that cable may be withdrawn through opening **22,** turntable **26** rotating while pan **16** remains relatively stationary.

When payout ceases as by terminating a pull on cable **24,** turntable **26** continues to rotate with respect to relatively stationary pan **16.** Since cable is no longer being pulled through opening **22,** coils of cable **24** within wall **20** on turntable **26** will expand rather rapidly outwardly until they contract the inner surface of wall **20.** At that time, the frictional engagement of coils of cable **24** against wall **20** abruptly terminates rotation of turntable **26** with respect to pan **16** the dispenser stops.

Cover **32** is provided with centering cone **30** protruding therethrough so that during the braking action just described, coils of cable **24** will not jump over the cone **30,** thus looping itself in an unorderly fashion, and possibly jam in the dispenser, rendering it inoperable. On the contrary, all that is needed to begin dispensing again is another outward pull on cable **24.** Of course, cover has friction fit onto wall **20** or is otherwise suitably detachably mounted therefrom so that the cover **32** may be removed to replenish the supply of cable **24.**

The invention may be embodied in other specific forms without departing from the spirit or essential characteristics thereof. The present embodiment is therefore to be considered in all respects as illustrative and not restrictive, the scope of the invention being indicated by the appended claims rather than by the foregoing description, and all changes which come within the meaning and range of equivalency of the claims are therefore intended to be embraced therein.

What is claimed and desired to be secured by Letters Patent is:

1. A cable dispenser comprising a relatively stationary base, a cable dispensing control member having a bottom and an upstanding substantially cylindrical side wall, means mounting said member on said base for free rotation about the axis of said side wall, a turntable for supporting a coil of cable disposed within said member, means mounting said turntable on the bottom of said member for free rotation about said axis independently of rotation of said member, and means providing a dispensing opening at said wall through which the cable may be withdrawn from the dispenser, whereby when cable is pulled out through said opening said member is automatically oriented to align said opening with the cable payout direction while said turntable is free to relatively rotate as the cable is pulled out of the dispenser.

2. The cable dispenser defined in claim 1, wherein said wall surrounds the coil on said turntable in such relation that upon cessation of payout pull on the cable coils of cable within the member expand into friction contact with said wall and thereby arrest rotation of the turntable to prevent further payout of cable from the dispenser.

3. The cable dispenser defined in claim 1 wherein said member is pan-shaped and is provided with a cover having an opening on said axis, and said turntable has a central coil mounting cone extending upwardly into said cover opening.

4. The cable dispenser defined in claim 3 wherein the turntable is substantially parallel to the bottom of said pan-shaped member and said dispensing opening is near the lower end of said wall.

5. The cable dispenser defined in claim 1, wherein said base has a plurality of detachable support legs.

6. The cable dispenser defined in claim 1, wherein said mounting means for the cable dispensing control member and the turntable are concentric ball bearing assemblies.

7. A cable dispenser comprising: a fixed base; a generally cylindrical, upwardly open pan having a surrounding wall; first means for rotatably mounting said pan on said base; turntable means for supporting a coiled supply of cable and being located on said pan within said wall; second means for rotatably mounting said turntable means on said pan; means defining a cable dispensing opening in said pan wall; means for retaining cable within said pan in a coiled condition on said turntable means during payout of cable from said cable dispenser whereby, upon abrupt cessation of paying out of cable from said cable dispenser, said turntable may rotate with respect to said pan to cause coils of cable on said turntable to expand outwardly against said pan wall to thereby arrest rotary motion of said turntable with respect to said wall; said means for retaining said cable in a coiled condition on said turntable means comprising a centering cone, formed concentrically centrally on said turntable and extending vertically upwardly therefrom beyond a horizontal plane defined by the upper terminal circumference of said pan wall, a cover on said pan wall extending over said turntable and being removable from the pan wall to replenish said cable dispense with a supply of cable, said cover including means defining an opening centrally therein, and said turntable centering cone extending upwardly therethrough whereby cable coiled about said cone on said turntable may be removed from said turntable only by being fed tangentially from said turntable through said pan wall dispensing opening.

8. A cable dispenser as claimed in claim 7 wherein said turntable and centering cone are integrally formed together as a one piece member.

9. A cable dispenser comprising: a fixed table assembly having a generally horizontal support surface and at least three supporting legs each being detachable from said support surface; a generally cylindrical, upwardly open pan on said support surface and having an upstanding wall therearound; first bearing means for freely rotatably mounting said pan on said support surface; an integrally formed upwardly open reel for a supply of cable, located within said pan and comprising a generally circular turntable having a centrally disposed cable centering cone extending upwardly therefrom above a horizontal plane defined by upper terminal edge of said wall; second bearing means for freely rotatably mounting said turntable on said pan within said wall; a cover on said pan being removably friction fit on said wall and having means defining an opening centrally therethrough, said cone extending upwardly therethrough in assembly; and means defining a cable dispensing opening through said pan wall for feeding cable tangentially outwardly from said cable dispenser by pulling on a cable end extended through said dispensing opening, said cable dispenser abruptly ceasing dispensing of cable upon terminating pulling of cable from said dispenser due to coils of cable on said turntable expanding outwardly against said wall to arrest relative movement between said wall and turntable.

* * * * *